CCD-TRV54E/TRV56E/TRV62/TRV64E/TRV72/TRV82/TRV94/TRV94E
RMT-708/717

SERVICE MANUAL

US Model
CCD-TRV62/TRV72/TRV82

Canadian Model
CCD-TRV72/TRV82

AEP Model
UK Model
CCD-TRV64E/TRV94E

East European Model
North European Model
Russian Model
CCD-TRV64E

E Model
CCD-TRV54E/TRV56E/TRV94/TRV94E

Hong Kong Model
CCD-TRV56E/TRV94/TRV94E

Australian Model
CCD-TRV56E

Tourist Model
CCD-TRV56E/TRV94/TRV94E

Chinese Model
CCD-TRV64E

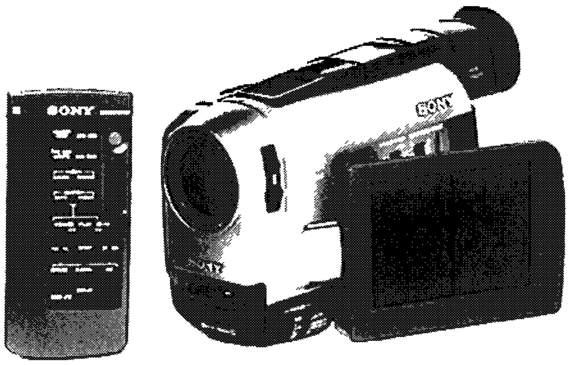


Photo : CCD-TRV94E
: RMT-717

Handycam Vision™
video 8
video Hi8
B MECHANISM

997395511

For MECHANISM ADJUSTMENTS, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL VII" (9-973-801-11).

SPECIFICATIONS

Video camera recorder

System

Video recording system
CCD-TRV62/TRV72/TRV82/TRV94 :
Four rotary heads, Helical scanning FM system (SP/LP separate heads)
CCD-TRV54E/TRV56E/TRV64E/TRV94E :
Two rotary heads, Helical scanning FM system

Audio recording system
Rotary heads, FM system

Video signal
CCD-TRV62/TRV72/TRV82/TRV94 :
NTSC color, EIA standards
CCD-TRV54E/TRV56E/TRV64E/TRV94E :
Pal colour, CCIR standards

Usable cassette
CCD-TRV62/TRV64E/TRV72/TRV82/TRV94/TRV94E :
8 mm video format cassette (Hi8 or standard 8)
CCD-TRV54E/TRV56E :
8 mm video format cassette (standard 8)

CCD-TRV62/TRV72/TRV82/TRV94 :
Recording/Playback time (using 120 min. cassette)
SP mode 2 hours
LP mode 4 hours
CCD-TRV54E/TRV56E/TRV64E/TRV94E :
Recording/Playback time (using 90 min. cassette)
SP mode 1 hour 30 min
LP mode 3 hours

CCD-TRV62/TRV72/TRV82/TRV94 :
Fastforward/rewind time (using 120 min. cassette)
Approx. 4 min
CCD-TRV54E/TRV56E/TRV64E/TRV94E :
Fastforward/rewind time (using 90 min. cassette)
Approx. 4 min

Image device
CCD (Charge Coupled Device)

Viewfinder
CCD-TRV72/TRV82/TRV94/TRV94E :
Electronic viewfinder (Color)
CCD-TRV54E/TRV56E/TRV62/TRV64E :
Electronic viewfinder (Monochrome)

Lens
Combined power zoom lens
Filter diameter 1 $^{7}/_{16}$ in (37 mm)
15x (Optical)
CCD-TRV54E/TRV56E/TRV94 :
180x (Digital)
CCD-TRV62/TRV64E/TRV72/TRV82/TRV94E :
30x (Digital)

Focal distance
$^{3}/_{16}$-2 $^{1}/_{2}$ in (4.1 – 61.5 mm)
CCD-TRV54E/TRV56E/TRV64E/TRV94/TRV94E :
1$^{7}/_{8}$-27 $^{7}/_{8}$ in (47 – 705 mm)
CCD-TRV62/TRV72/TRV82 :
1$^{9}/_{16}$-23 $^{1}/_{8}$ in (39 – 585 mm)
when converted to a 35 mm still camera

Color temperature
Auto

Minimum illumination
CCD-TRV62/TRV72/TRV82 :
2 lux (F 1.4)
CCD-TRV54E/TRV56E/TRV64E/TRV94/TRV94E :
0.7 lux (F 1.4)

illumination range
CCD-TRV62/TRV72/TRV82 :
2 lux to 100,000 lux
CCD-TRV54E/TRV56E/TRV64E/TRV94/TRV94E :
0.7lux to 100,000 lux

Recommended illumination
More than 100 lux
(CCD-TRV54E/TRV56E/TRV94 only)

- Minimam illumination expresses the light level a camcorder requires to produce a picture. Visible minimum low light expresses the light level to produce a visible signal.

LCD screen

Picture
2.5 inches measured diagonally
(CCD-TRV64E)
50.6 x 37.7 mm (2 x 1 $^{1}/_{2}$ in.)
3.5 inches measured diagonally
(CCD-TRV54E/TRV62/TRV72)
72.7 x 50.7 mm (1 $^{3}/_{4}$ x 2 in.)
4 inches measured diagonally
(CCD-TRV56E/TRV82/TRV94/TRV94E)
80.7 x 58.9 mm (3 $^{1}/_{4}$ x 2 $^{3}/_{8}$ in.)

On-screen display
TN LCD/TFT active matrix method

Total dot number
2.5 inches measured diagonally
(CCD-TRV64E)
84,260 (383 x 220)
3.5 inches measured diagonally
(CCD-TRV62/TRV72)
105,600 (480 x 220)
(CCD-TRV54E)
105,380 (479 x 220)
4 inches measured diagonally
(CCD-TRV82)
112,320 (480 x 234)
(CCD-TRV56E/TRV94/TRV94E)
112,086 (479 x 234)

— Continued on next page —

8 VIDEO CAMERA RECODER
CCD-TRV54E/TRV56E

Hi8 VIDEO CAMERA RECODER
CCD-TRV62/TRV64E/TRV72/TRV82/TRV94/TRV94E

MICROFILM

SONY®

Input and output connectors

S video input/output
(CCD-TRV62/TRV64E/TRV72/TRV82/TRV94/TRV94E (Except AEP, UK model) only)
S video output
(CCD-TRV64E/TRV94E (AEP, UK model only)
4-pin mini DIN
Luminance signal 1 Vp-p, 75 ohms, unbalanced
CCD-TRV62/TRV72/TRV82/TRV94 :
Chrominance signal 0 286 Vp-p, 75 ohm, unbalanced
CCD-TRV64E/TRV94E :
Chrominance signal 0 3 Vp-p, 75 ohm, unbalanced
Video input/output
(CCD-TRV54E/TRV56E/TRV62/TRV64E/TRV72/TRV82/TRV94/TRV94E (Except AEP, UK model) only)
Video output
(CCD-TRV64E/TRV94E (AEP, UK model) only)
Phono jack, 1 vp-p, 75 ohm, unbalanced
Audio input/output
(CCD-TRV54E/TRV56E/TRV62/TRV64E/TRV72/TRV82/TRV94/TRV94E (Except AEP, UK model) only)
Audio output
(CCD-TRV64E/TRV94E (AEP, UK model) only)
Phono jacks (2 · stereo L and R)
327 mV, (at output impedance 47 kilohm) impedance less than 2 2 kilohm
RFU DC OUT
Special minijack, DC 5 V
Headphone jack
Stereo minijack (ø 3 5 mm)
LANC control jack
Stereo mini-minijack (ø 2 5 mm)
MIC jack
Minijack, 0 388 mV low impedance with 2 5 to 3 0 V DC, output impedance 6 8 kilohm (ø 3 5 mm)
Stereo type
Speaker
Dynamic speaker
Intelligent accessory shou
8-pin connector
LASER LINK
(CCD-TRV62/TRV72/TRV82 only)
Video/Audio IR space transmission system according to EIAJ (Electric Industries Association of Japan) standards
Audio carrier wave .
L ch 4 3 MHz
R ch 4 8 MHz

General

Power requirements
7 2 V (battery pack)
8 4 V (AC power adaptor)
Average power consumption
During camera recording using LCD

CCD-TRV62	4 8W
CCD-TRV72	4 8W
CCD-TRV82	5 2W
CCD-TRV94/TRV94E	5 2W
CCD-TRV54E	4 8W
CCD-TRV56E	5 0W
CCD-TRV64E	4 4W

Viewfinder

CCD-TRV62	3 6W
CCD-TRV72	3 6W
CCD-TRV82	3 6W
CCD-TRV94 ·	3 6W
CCD-TRV54E	3 7W
CCD-TRV56E/TRV64E/TRV94E	3 5W

Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
-20°C to +60°C (-4°F to +140°F)
Dimensions (Approx.)
CCD-TRV54E/TRV56E/TRV62/TRV72/TRV82/TRV94/TRV94E :
108 x 123 x 203 mm
(4 $^1/_4$ x 4 $^{13}/_{16}$ x 8 in) (w/h/d)
CCD-TRV64E :
106 x 108 x 200 mm
(4 $^1/_4$ x 4 $^3/_8$ x 7 $^7/_8$ in) (w/h/d)
Mass (Approx.)
CCD-TRV62/TRV72/TRV82 :
990 g (2 lb 3 oz)
excluding the battery pack, lithium battery, cassette and shoulder strap
1 1 kg (2 lb 8 oz)
including the battery pack NP-F530, lithium battery CR2025, cassette and shoulder strap
CCD-TRV56E/TRV94/TRV94E :
1 k g (2 lb 3 oz)
excluding the battery pack, lithium battery, cassette and shoulder strap
1 1 kg (2 lb 8 oz)
including the battery pack NP-F330, lithium battery CR2025, cassette and shoulder strap
CCD-TRV54E :
970 g (2 lb 2 oz)
excluding the battery pack, lithium battery, cassette and shoulder strap
1 1 kg (2 lb 6 oz)
including the battery pack NP-F530, lithium battery CR2025, cassette and shoulder strap
CCD-TRV64E :
900 g (1 lb 15 oz)
excluding the battery pack, lithium battery, cassette and shoulder strap
1 1 kg (2 lb 6 oz)
including the battery pack NP-F530, lithium battery CR2025, cassette and shoulder strap
Microphone
Stereo type
Supplied accessories
See page 4

AC power adaptor

Power requirements
110 – 240 V AC, 50/60 Hz
Power consumption
25 W
Output voltage
DC OUT 8 4 V, 1 9 A in operating mode
Battery charge terminal 8 4 V, 1 4 A in chage mode
Application
Sony battery packs
NP-F530, NP-F730, NP-F930
lithium ion type
Operating temperature
32°F to 104°F (0°C to 40°C)
Storage temperature
-4°F to +140°F (-20°C to +60°C)
Dimensions (Approx.)
3 $^1/_4$ x 1 $^{13}/_{16}$ x 6 $^1/_2$ in
(81x45x163 mm) (w/h/d)
including projecting parts and controls
Masss (Approx.)
1 lb 3 oz (560 g)

Design and specifications are subject to change without notice

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections Check the entire board surface for solder splashes and bridges

2 Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors

3 Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.

4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

5. Check the B+ voltage to see it is at the values specified.

6. Flexible Circuit board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

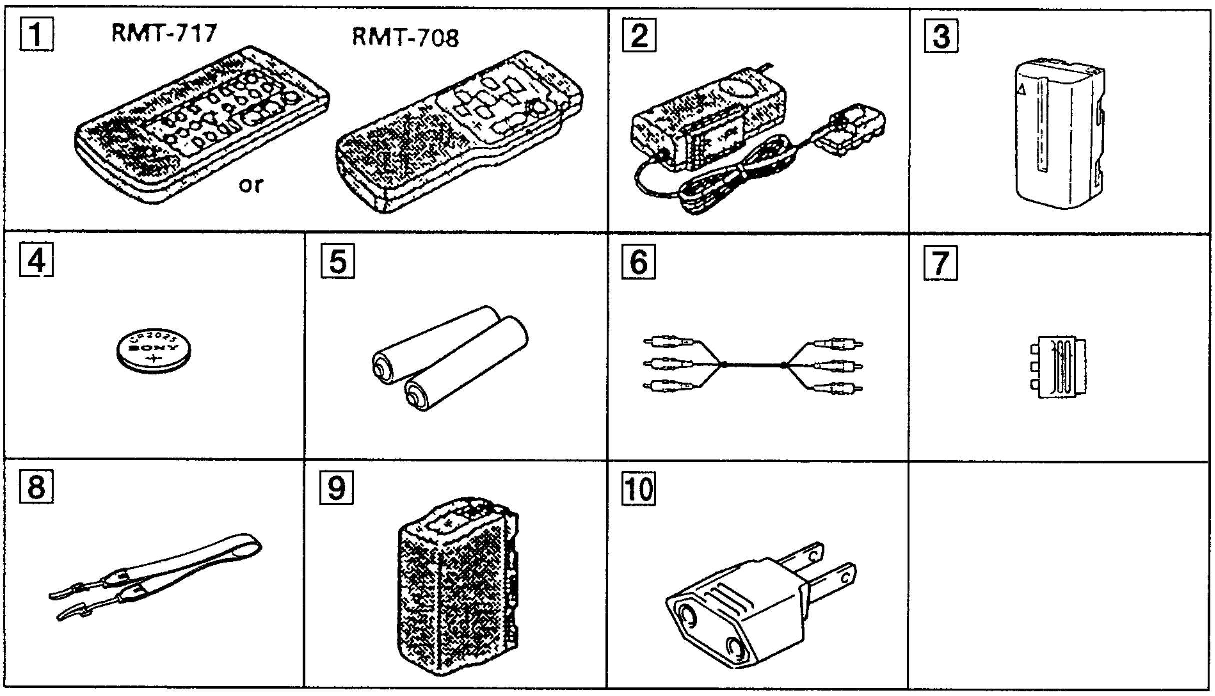
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

Table for difference of function

Model		CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV64E	CCD-TRV94E	CCD-TRV94E	
Destination		US	US, CND	US, CND	E,HK JE	E	E,HK, AUS,JE	AEP,EE, NE,RU,UK	CH	AEP, UK	E,HK, JE	
Classification		TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TYPE I	TYPE J	
Remote Commander		RMT-708	RMT-708	RMT-708	RMT-717	RMT-708	RMT-708	RMT-708	RMT-708	RMT-717	RMT-717	
Color System		NTSC	NTSC	NTSC	NTSC	PAL	PAL	PAL	PAL	PAL	PAL	
Hi 8		○	○	○	○			○	○	○	○	○ with S VIDEO Terminal
Standard 8						○	○					
Lens	Optical	15X	15X	15X	15X	15X	15X	15X	15X	15X	15X	
	Digital	30X	30X	30X	180X	180X	180X	30X	180X	30X	180X	
View Finder		B/W	Color	Color	Color	B/W	B/W	B/W	B/W	Color	Color	Color EVF with VF-111, 112 board and with VC-190 board IC800 B/W EVF with VF-102 board (CCD-TRV64E) or VF-99 board (CCD-TRV54E/TRV56E/ TRV62)
TBC & DNR		○	○	○	○			○	○	○	○	○ IC114 on VC-190 board is CXD3119R No mark IC114 on VC-190 board is GXD3111R
VTR REC		○	○	○	○	○	○		○		○	
IR Transmitter		○	○	○								○ with MI-27/28 board IC361
Digital Efect					○	○				○	○	○ with MM-35 board IC702, 704
Photo mode					○	○				○	○	○ with MM-35 board IC702, 704
LCD		3 5 inch	3 5 inch	4 inch	4 inch	3 5 inch	4 inch	2 5 inch	2 5 inch	4 inch	4 inch	2 5 inch with PC-65, PD-82, SD-28, MA-298 board 3 5 inch with PD-80, SD-27, MI-28 board 4 inch PAL with PD-80, SD-27, MI-28 board 4 inch NTSC with PD-78, SD-27, MI-27 board
Time Code					○							○ with MM-35 board IC701
Video Head		4	4	4	4	2	2	2	2	2	2	

Note :
East European model is abbreviated as EE.
North European model is abbreviated as NE.
Hong Kong model is abbreviated as HK.
Australian model is abbreviated as AUS.
Tourist model is abbreviated as JE.
Chinese model is abbreviated as CH.
Russian model is abbreviated as RU.

Supplied accessories



1 **Wireless Remote Commander (1)**
RMT-708 : CCD-TRV54E / TRV56E / TRV64E / TRV62 / TRV72 / TRV82
RMT-717 : CCD-TRV94E / TRV94

2 **AC power adaptor (1)**
AC-V316 : CCD-TRV54E / TRV56E / TRV64E : CH / TRV94E : E, HK, JE / TRV62 / TRV72 / TRV82 / TRV94
AC-V326 : CCD-TRV64E : AEP, EE, NE, RU, UK / TRV94E : AEP, UK

3 **NP-F530 battery pack (1)**

4 **CR2025 Lithium Battery**
The lithium battery is already installed in your camcorder.

5 **Size AA (R6) battery for Remote Commander (2)**

6 **A / V connecting cable (1)**

7 **21 pin adaptor**
CCD-TRV56E : AUS / TRV64E :AEP, EE, NE, RU, UK / TRV94E : AEP, UK / TRV82

8 **Shoulder strap (1)**

9 **Battery case (1)**
CCD-TRV64E : AEP, EE, NE, RU, UK / TRV94E : AEP, UK / TRV62 / TRV72 / TRV82

10 **2 pin conversion adaptor** (1)
CCD-TRV54E / TRV56E : E, HK, JE / TRV64E : CH / TRV94 / TRV94E : E, HK

Note :
East European model is abbreviated as EE.
North European model is abbreviated as NE.
Hong Kong model is abbreviated as HK.
Australian model is abbreviated as AUS.
Tourist model is abbreviated as JE.
Chinese model is abbreviated as CH.
Russian model is abbreviated as RU.

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

In this unit, about 25 seconds after power is supplied (8.4V) to the battery terminal using the service power cord (J-6082-223-A), the power is shut off so that the unit cannot operate

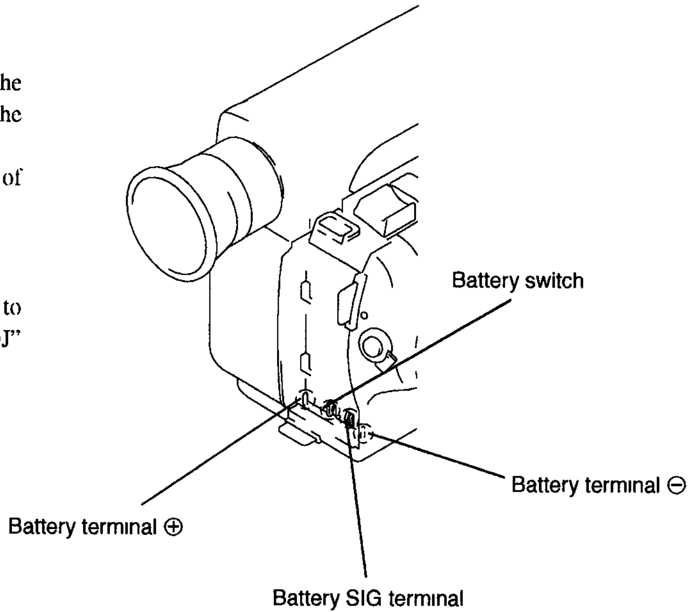
This following two methods are available to prevent this Take note of which to use during repairs

Method 1.

Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the remote commander switch to the "ADJ" side

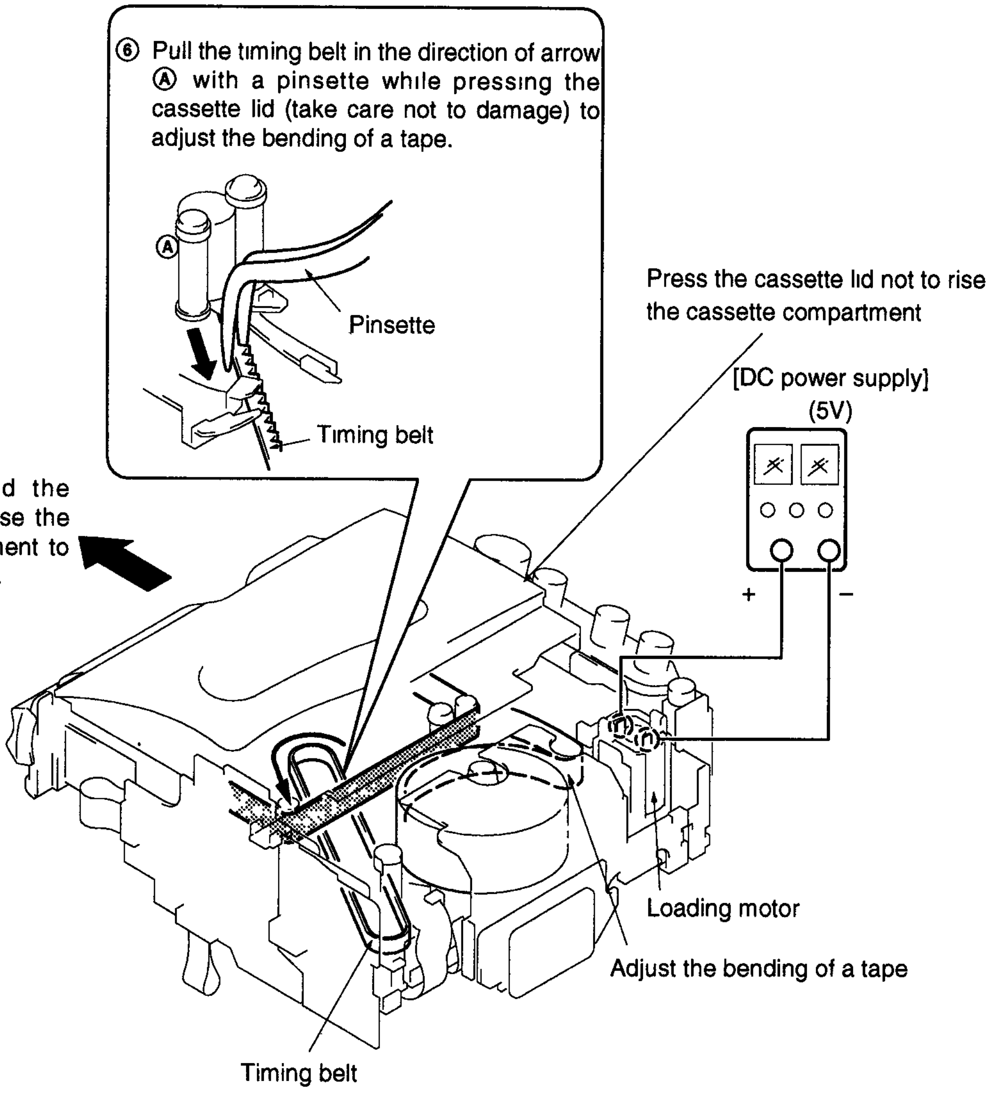
Method 2.

Press the following battery switch using adhesive tape, etc


Battery switch
Battery terminal ⊖
Battery terminal ⊕
Battery SIG terminal

2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to 2-1-1. to remove the front panel assembly.
② Refer to 2-1-2. to remove the cabinet (R) assembly.
③ Refer to 2-1-11 to remove the battery panel assembly.
④ Refer to 2-1-13. to remove the cabinet (L) assembly
⑤ Add +5V from the DC POWER SUPPLY and unload with a pressing the cassette lid



⑥ Pull the timing belt in the direction of arrow Ⓐ with a pinsette while pressing the cassette lid (take care not to damage) to adjust the bending of a tape.

⑦ Let go your hold the cassette lid and rise the cassette compartment to take out a cassette.

Ⓐ
Pinsette
Timing belt
Press the cassette lid not to rise the cassette compartment
[DC power supply]
(5V)
+
−
Loading motor
Adjust the bending of a tape
Timing belt

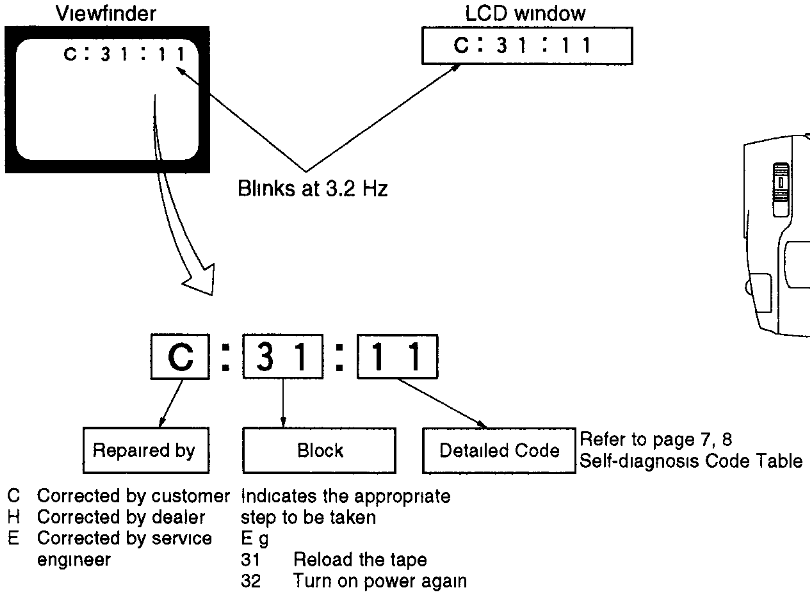
SELF-DIAGNOSIS FUNCTION

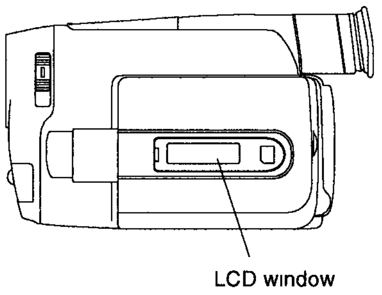
1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or LCD window what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.

2. Self-diagnosis display

When problems occur while the unit is operating, the counter of the viewfinder or LCD window shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the "repaired by:", "block" in which the problem occurred, and "detailed code" of the problem.


Viewfinder
C : 3 1 : 1 1
LCD window
C : 3 1 : 1 1
Blinks at 3.2 Hz
C : 3 1 : 1 1
Repaired by
Block
Detailed Code
Refer to page 7, 8
Self-diagnosis Code Table
C Corrected by customer
H Corrected by dealer
E Corrected by service engineer
Indicates the appropriate step to be taken
E g
31 Reload the tape
32 Turn on power again

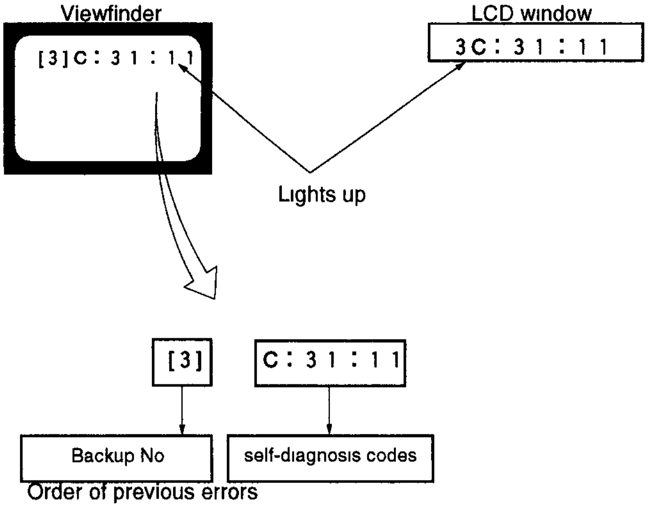


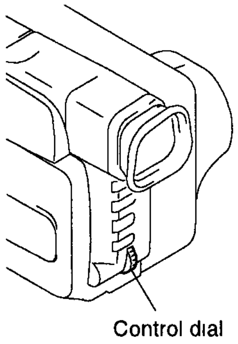
3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the "STOP" key, set the switch from OFF to "CAMERA" or "VTR or PLAYER", and continue pressing the "STOP" key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No and the 5-character self-diagnosis codes.


Viewfinder
[3]C : 3 1 : 1 1
LCD window
3C : 3 1 : 1 1
Lights up
[3]
C : 3 1 : 1 1
Backup No
self-diagnosis codes
Order of previous errors


Control dial

3-2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

[1] : Occurred first time	[4] : Occurred fourth time
[2] : Occurred second time	[5] : Occurred fifth time
[3] : Occurred third time	[6] : Occurred the last time

3-3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The self-diagnosis display data will be backed up by the coin-type lithium battery. When this coin-type lithium battery is disconnected, the self-diagnosis data will be lost by initialization.

4. Self-diagnosis Code Table

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	2	1	0	0	Condensation	Remove the cassette, and insert it again after one hour
C	2	2	0	0	Video head is dirty	Clean with the optional cleaning cassette
C	2	3	0	0	Non-standard battery is used	Use the InfoLITHIUM battery
C	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning
C	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning
C	3	1	2	0	T reel side tape slacking when unloading	Load the tape again, and perform operations from the beginning
C	3	1	2	1	S reel side tape slacking when unloading	Load the tape again, and perform operations from the beginning
C	3	1	2	2	T reel fault	Load the tape again, and perform operations from the beginning
C	3	1	2	3	S reel fault	Load the tape again, and perform operations from the beginning
C	3	1	3	0	FG fault when starting capstan	Load the tape again, and perform operations from the beginning.
C	3	1	3	1	FG fault during normal capstan operations	Load the tape again, and perform operations from the beginning
C	3	1	4	0	FG fault when starting drum	Load the tape again, and perform operations from the beginning
C	3	1	4	1	PG fault when starting drum	Load the tape again, and perform operations from the beginning
C	3	1	4	2	FG fault during normal drum operations	Load the tape again, and perform operations from the beginning
C	3	1	4	3	PG fault during normal drum operations	Load the tape again, and perform operations from the beginning.
C	3	1	4	4	Phase fault during normal drum operations	Load the tape again, and perform operations from the beginning
C	3	2	1	0	LOAD direction loading motor time-out	Remove the battery or power cable, connect, and perform operations from the beginning
C	3	2	1	1	UNLOAD direction loading motor time-out	Remove the battery or power cable, connect, and perform operations from the beginning
C	3	2	2	0	T reel side tape slacking when unloading	Remove the battery or power cable, connect, and perform operations from the beginning
C	3	2	2	1	S reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning
C	3	2	2	2	T reel fault	Remove the battery or power cable, connect, and perform operations from the beginning
C	3	2	2	3	S reel fault	Remove the battery or power cable, connect, and perform operations from the beginning
C	3	2	3	0	FG fault when starting capstan	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	1	FG fault during normal capstan operations	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	1	PG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	3	PG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning
C	3	2	4	4	Phase fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
E	6 1	0 0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⑲ of CN113 of VC-190 board) when focusing is performed when the focus dial is rotated in the focus manual mode and the focus motor drive circuit (IC252, IC255 of VC-190 board) when the focusing is not performed.
E	6 1	1 0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ㉑ of CN113 of VC-190 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC252, 255 of VC190 board) when zooming is not performed.
E	6 2	0 0	Handshake correction function does not work well.(With pitch angular velocity sensor output stopped)	Inspect pitch angular velocity sensor (SE452 of SE-61 board) peripheral circuits.
E	6 2	0 1	Handshake correction function does not work well.(With yaw angular velocity sensor output stopped)	Inspect yaw angular velocity sensor (SE451 of SE-61 board) peripheral circuits

TABLE OF CONTENTS

Section Title Page

SERVICE NOTE

1. Power Supply During Repairs 5
2. To Take out a Cassette when not Eject (Force Eject) 5

Self-Diagnosis Function

1 Self-diagnosis function 6
2. Self-diagnosis Display 6
3. Service Mode Display 6
3-1. Display Method 6
3-2. Switching of Backup No. 6
3-3. End of Display 6
4. Self-diagnosis Code Table 7

1. GENERAL

Using this manual 1-1
Checking supplied accessories 1-1
Charging and installing the battery pack 1-1
Inserting a cassette 1-2
Camera recording 1-2
Letting the subject monitor the shot 1-4
Hints for better Shooting 1-5
Checking the recorded picture 1-5
Playing back a tape 1-6
Searching for the end of the picture 1-7
Using alternative power sources 1-7
Changing the mode settings 1-8
Fade-in and fade-out 1-9
Overlapping two pictures 1-9
Wiping away a still picture 1-10
Using the wide mode function 1-10
Photo recording 1-11
Enjoying picture effect 1-11
Superimposing a still picture on a moving picture 1-12
Recording still picture successively 1-12
Replacing a brigher portion of a still picture with a moving picture 1-12
Adding an incidental image to pictures 1-13
Using slow shutter 1-13
Adding an old movie type atmosphere to pictures 1-13
Focusing manually 1-13
Using the PROGRAM AE function 1-14
Shooting with backlighting 1-14
Adjusting the exposure 1-15
Releasing the STEADY SHOT function 1-15
Superimposing a title 1-15
Making your own titles 1-16
Re-recording a picture in the middle of a recorded tape 1-16
Recording with the date/time 1-17
Optimizing the recording condition 1-17
Watching on a TV screen 1-17
Enjoying digital effect during platback 1-18
Searching the boundaries of recorded date 1-18
Returning to a pre-registered position 1-19
Locating the marking position 1-19
Writing the RC time code on a recorded tape 1-20
Editing onto another tape 1-21
Charging the lithium battery in the camcoder 1-21
Resetting the date and time 1-22
Usable cassettes and playback modes 1-22
Tips for using the battery pack 1-22
Maintenance information and precautions 1-24
Using your camcorder abroad 1-25
Trouble check 1-25
Identifying the parts 1-26
Warning Indicators 1-28

Section Title Page

2. DISASSEMBLY

2-1 Removal of CCD-TRV54E/TRV56E/TRV62/TRV72/TRV82/TRV94/TRV94E 2-1
2-1-1. Removal of Front Panel Assembly 2-1
2-1-2 Removal of Cabinet (R) Assembly 2-1
2-1-3 Removal of EVF Block Assembly (Color EVF) 2-1
2-1-4. Removal of EVF Block Assembly (B/W EVF) 2-1
2-1-5. Removal of EVF Block Assembly (Color EVF) 2-2
2-1-6. Removal of EVF Block Assembly (B/W EVF) 2-2
2-1-7. Attach the Harness of Hinge Section 2-3
2-1-8. Removal of LCD Block 2-3
2-1-9. Removal of Control Switch Block (SD-4) 2-4
2-1-10. Removal of Shoe Base 2-4
2-1-11. Removal of Battery Panel Assembly 2-4
2-1-12 Removal of Cassette LID Assembly 2-4
2-1-13. Removal of Cabinet (L) Assembly 2-5
2-1-14. Removal of VTR Control Switch Block (FK) 2-5
2-1-15. Removal of Zoom Lens Block 2-5
2-1-16. Removal of PJ-80 Board and SE-61 Board 2-5
2-1-17. Removal of DD-95 Board and MM-35 Board 2-6
2-1-18. Removal of VC-190 Board 2-6
2-1-19. Service Position 2-6
2-1-20. Circuit Boards Location 2-7
2-2 Removal of CCD-TRV64E 2-8
2-2-1. Removal of Front Panel Assembly 2-8
2-2-2. Removal of Cabinet (R) Assembly 2-8
2-2-3. Removal of EVF Block Assembly (Color EVF) 2-8
2-2-4. Removal of EVF Block 2-8
2-2-5 Removal of LCD Block 2-9
2-2-6. Removal of SD-28 Board 2-9
2-2-7. Removal of Control Switch Block 2-9
2-2-8. Removal of Battery Panel Assembly 2-10
2-2-9. Removal of Cassette LID Assembly 2-10
2-2-10. Removal of Cabinet (L) Assembly 2-10
2-2-11 Removal of VTR Control Switch Block (FK) 2-10
2-2-12 Removal of Zoom Lens Block 2-11
2-2-13. Removal of PJ-80 Board and SE-61 Board 2-11
2-2-14. Removal of DD-95 Board and MM-35 Board 2-11
2-2-15. Removal of VC-190 Board 2-11
2-2-16. Circuit Boards Location 2-12

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram 3-1
3-2. Video/Camera 1 Block Diagram 3-5
3-3 Video/Camera 2 Block Diagram 3-9
3-4. VTR/Camera Control Block Diagram 3-12
3-5. Servo Block Diagram 3-15
3-6. Mode Control Block Diagram 3-20
3-7. Audio Block Diagram 3-23
3-8. NTSC 4 Inch LCD Block Diagram (CCD-TRV82/TRV94) 3-28
3-9 3.5 Inch/PAL 4 Inch LCD Block Diagram (CCD-TRV54E/TRV56ETRV62/TRV72/TRV94E) 3-31
3-10. 2.5 Inch LCD Block Diagram (CCD-TRV64E) 3-34
3-11. Color EVF Block Diagram (CCD-TRV72/TRV82/TRV94/TRV94E) 3-37
3-12. B/W EVF 1 Block Diagram (CCD-TRV54E/TRV56E/TRV62) 3-40
3-13. B/W EVF 2 Block Diagram (CCD-TRV64E) 3-41
3-14. Power Block Diagram 3-43

Section Title Page

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. Frame Schematic Diagram ... 4-1
4-2 Printed Wiring Boards and Schematic Diagrams ... 4-8
- CD-166 (CCD Imager) Board ... 4-9
- SE-61 (Steady Shot) Board ... 4-11
- VC-190 (Camera, Y/C Process, Video Process, REC/PB Head Amp, Servo/System Control, Audio, Video IN/OUT, Mode Control) Board ... 4-16
- VC-190 (Camera 1) Board ... 4-21
- VC-190 (Camera 2) Board ... 4-24
- VC-190 (Camera 3) Board ... 4-27
- VC-190 (Y/C Process) Board ... 4-31
- VC-190 (Video Process 1) Board ... 4-35
- VC-190 (Video Process 2) Board ... 4-38
- VC-190 (REC/PB Head Amp) Board ... 4-41
- VC-190 (Servo/System Control) Board ... 4-45
- VC-190 (Servo), FP-249, FP-356 (Tape Sensor) Board ... 4-49
- VC-190 (Audio) Board ... 4-53
- VC-190 (Video IN/OUT) Board ... 4-57
- VC-190 (Mode Control) Board ... 4-62
- PJ-80 (AV IN/OUT), FP-527 Board ... 4-65
- Control Switch Block (FK, SS-8100) ... 4-70
- MM-35 (Digital Memory) Board ... 4-71
- MI-27 (Stereo Mic, Laser Link) (NTSC 4 Inch LCD Model) Board, MI-28 (Stereo Mic, Laser Link) (3.5 Inch/PAL 4 Inch LCD Model) Board ... 4-79
- MI-27, MI-28 (Stereo Mic) Board ... 4-81
- MI-27, MI-28 (Laser Link) Board ... 4-84
- MA-298 (Stereo Mic) (2.5 Inch LCD Model) Board ... 4-87
- SD-27 (Speaker Drive) (3.5 Inch/4 Inch LCD Model), SD-28 (Speaker Drive) (2.5 Inch LCD Model) Board ... 4-94
- PD-78 (RGB Decorder, LCD Timing Generator, Back Light, DC/DC Converter) (NTSC 4 Inch LCD Model) Board ... 4-101
- PD-78 (RGB Decorder) Board ... 4-105
- PD-78 (LCD Timing Generator) Board ... 4-110
- PD-78 (Back Light, DC/DC Converter) Board ... 4-112
- PD-80 (RGB Decorder) Board ... 4-115
- PD-80 (LCD Timing Generator) Board ... 4-120
- PD-80 (Back Light, DC/DC Converter) Board ... 4-122
- PD-80 (RGB Decorder, LCD Timing Generator, Back Light, DC/DC Converter) (3.5 Inch/PAL 4 Inch LCD Model) Board ... 4-125
- PC-65 (RGB Decorder) (2.5 Inch LCD Model) Board ... 4-130
- PD-82 (LCD Timing Generator) Board ... 4-135
- PD-82 (Back Light, DC/DC Converter) Board ... 4-139
- PD-82 (LCD Timing Generator, Back Light, DC/DC Converter) (2.5 Inch LCD Model) Board ... 4-141
- Control Switch Block (SD-4) Board ... 4-144
- Control Switch Block (SD-2.5) Board ... 4-145
- VF-111 (Color EVF) (Color EVF Model) Board ... 4-147
- LB-50 (Back Light) (Color EVF Model) Board ... 4-147
- VF-112 (Color EVF) (Color EVF Model) Board ... 4-152
- VF-99 (B/W EVF) (B/W EVF Model 1) Board ... 4-157
- VF-102 (B/W EVF) (B/W EVF Model 2) Board ... 4-160
- DD-95 (Power) Board ... 4-163

Section Title Page

5. ADJUSTMENTS

5-1 CAMERA SECTION ADJUSTMENTS ... 5-1
1-1. Preparations before Adjustment (Camera Section) ... 5-1
1-1-1. List of Service Tools ... 5-1
1-1-2. Preparations ... 5-3
1-1-3 Precautions ... 5-6
1. Switch settings ... 5-6
2. Adjusting Procedure ... 5-6
3 Subject ... 5-6
1-1-4. Adjusting Remote Commander ... 5-7
1 Using the adjusting remote commander ... 5-7
2. Precautions upon using the adjusting remote commander ... 5-7
1-1-5. Page D Address ... 5-8
1-1-6. Page F Address ... 5-10
1-1-7. Page E Address ... 5-16
1-1-8. Data Processing ... 5-19
1-2. Initialization of D, E, F Page Data ... 5-20
1. Initialization of D, E, F Page Data ... 5-20
2. Modification of D Page Data ... 5-20
3 Modification of F Page Data ... 5-23
4. Modification of E Page Data ... 5-24
1-3. Camera System Adjustment ... 5-25
1 HALL Adjustment ... 5-25
2. G-CAM flip Discrimination Adjustment ... 5-26
3. Flange Back Adjustment ... 5-26
3-1. Flange Back Adjustment (1) ... 5-26
3-2. Flange Back Adjustment (2) ... 5-27
4. Flange Back Check ... 5-27
5 Picture Frame Setting ... 5-28
6. Color Reproduction Adjustment ... 5-29
7. IRIS IN/OUT Adjustment ... 5-30
8. MAX GAIN Adjustment ... 5-31
9. Auto White Balance Standard Data Input ... 5-31
10. Auto White Balance Adjustment ... 5-32
11. White Balance Check ... 5-32
12. Velocity Sensor Sensitivity Adjustment ... 5-34
1-4. Color Electronic Viewfinder System Adjustments (Color EVF model: CCD-TRV72/TRV82/TRV94/TRV94E) 5-35
1. EVF Initial Data Input ... 5-35
2. VCO Adjustment (VF-112 board) ... 5-36
3. Bright Adjustment (VF-112 board) ... 5-36
4. Contrast Adjustment (VF-112 board) ... 5-37
5. Backlight Adjustment Comsumption Current (VF-111 board) ... 5-37
6. White Balance Adjustment (VF-112 board) ... 5-38
7. AUTO ON Level Adjustment (VF-111 board) ... 5-38
1-5. Monochrome Electronic Viewfinder System Adjustments (1) (CCD-TRV62/TRV54E/TRV56E) 5-39
1-5-1. Horizontal Slant Check ... 5-39
1-5-2. Centering Adjustment ... 5-39
1-5-3. Focus Adjustment ... 5-39
1-5-4. Aberration Adjustment ... 5-40
1-5-5. Horizontal Amplitude Adjustment (VF-99 board) ... 5-40
1-5-6. Vertical Amplitude Adjustment (VF-99 board) ... 5-41
1-5-7. Brightness Adjustments (VF-99 board) ... 5-41
1-5-8. Horizontal Amplitude, Vertical Amplitude, Focus Check ... 5-41
1-6. Monochrome Electronic Viewfinder System Adjustments (2) (CCD-TRV64E) ... 5-42
1-6-1. Horizontal Slant Check ... 5-42
1-6-2 Centering Adjustment ... 5-42
1-6-3. Focus Adjustment ... 5-42
1-6-4. Aberration Adjustment ... 5-43
1-6-5. Vertical Amplitude Adjustment and Horizontal Amplitude Check (VF-102 board) ... 5-43
1-6-6. Brightness Adjustments (VF-102 board) ... 5-44
1-6-7. Horizontal Amplitude, Vertical Amplitude, Focus Check ... 5-44

Section Title Page

1-7. LCD System Adjustment (1)
(NTSC 4" LCD model: CCD-TRV82/TRV94) 5-44
1. LCD initial data input 5-45
2. VCO adjustment (PD-78 board) 5-45
3. D range adjustment (PD-78 board) 5-46
4. Bright adjustment (PD-78 board) 5-46
5. Contrast adjustment (PD-78 board) 5-47
6. V-COM level adjustment (PD-78 board) 5-47
7. Color adjustment (PD-78 board) 5-48
8. Hue adjustment (PD-78 board) 5-48
9. V-COM adjustment (PD-78 board) 5-49
10. White balance adjustment (PD-78 board) 5-49
1-8. LCD System Adjustment (2)
(NTSC 3.5" LCD model: CCD-TRV62/TRV72)
(PAL 4" LCD model. CCD-TRV56E/TRV94E)
(PAL 3.5" LCD model· CCD-TRV54E)
(PAL 2.5" LCD model: CCD-TRV64E) 5-50
1. LCD initial data input 5-50
2. VCO adjustment (PD-80 board (3.5"/4" LCD model))
(PD-82 board (2.5" LCD model)) 5-51
3. Bright adjustment (PD-80 board (3.5"/4" LCD model))
(PC-65 board (2.5" LCD model)) 5-52
4. Contrast adjustment (PD-80 board (3.5"/4" LCD model))
(PC-65 board (2.5" LCD model)) 5-52
5. Color adjustment for NTSC model (PD-80 board) 5-53
6. Hue adjustment for NTSC model (PD-80 board) 5-53
7. Burst cleaning adjustment for PAL model (PD-80 board)
(PC-65 board) 5-54
8. Color adjustment for PAL model (PD-80 board)
(PC-65 board) 5-54
9. V-COM adjustment (PD-80 board) (PD-82 board) 5-55
10. White balance adjustment (PD-80 board) (PC-65 board) 5-56
1-9. Arrangement Diagram for Adjustment Parts 5-58

5-2. MECHANICAL SECTION ADJUSTMENT 5-63
2-1. Operating without a Cassette 5-63
2-2. Tape path Adjustment 5-63
1. Preparations for adjustments 5-63

5-3. VIDEO SECTION ADJUSTMENTS 5-64
3-1. Preparations before Adjustment 5-64
3-1-1. Equipments to be Used 5-64
3-1-2. Precautions in Adjustment 5-65
3-1-3. Connector for Adjustments 5-65
3-1-4. Connecting the Equipments 5-66
3-1-5. Checking the Input Signals 5-67
1 S Video input 5-67
2 Video input 5-67
3-1-6. How to Set the REC Mode in the Model Without
REC Switch (AEP, UK Model) 5-68
3-1-7. Alignment Tape 5-68
3-1-8. Input/Output Level and Impedance 5-70
3-1-9. Recording Mode (Standard 8/Hi8) switching
(Hi8 model) 5-70
3-1-10. Service Mode 5-70
1. Test mode setting 5-70
2. Emergency memory address 5-71
2-1. EMG CODE (Emergency Code) 5-71
2-2. MSW Codes 5-72
3. Bit value discrimination 5-73
4. Input/output selection check 5-73
5. Condensation, head clogging check 5-74
6. VTR state check (1) 5-74
7. VTR state check (2) 5-74
8. VTR state check (3) 5-75
9. Record of use check 5-75
3-2. System Control System Adjustments 5-76
1 Initialization of D, E, F Page Data 5-76
2. Battery End Adjustment (VC-190 board) 5-76

Section Title Page

3-3 Servo System Adjustments 5-77
1 CAP FG Offset Adjustment (VC-190 board) 5-77
2. Switching Position Adjustment (VC-190 board) 5-77
3 NTSC LP Mode Switching Position Adjustment
(VC-190 board) (CCD-TRV62/TRV72/TRV82/TRV94) 5-78
3-4. Video System Adjustments 5-78
1. 28 MHz Origin Oscillation Adjustment
(VC-190 board) 5-78
2. Filter fo Adjustment (VC-190 board) 5-79
3. Y OUT Level Adjustment (VC-190 board) 5-79
4 C OUT Level Adjustment (VC-190 board) 5-80
5. RP Filter fo Adjustment (VC-190 board) 5-80
6 AFC fo Adjustment (VC-190 board) 5-81
7. NTSC Hi8 REC Y Current Adjustment
(VC-190 board) (CCD-TRV62/TRV72/TRV82/TRV94) 5-81
8. PAL Hi8 REC Y Current Adjustment
(VC-190 board) (CCD-TRV64E/TRV94E) 5-82
9. PAL Standerd8 REC Y Current Adjustment
(VC-190 board) (CCD-TRV54E/TRV56E) 5-82
10. NTSC Hi8 REC L Level Adjustment
(VC-190 board) (CCD-TRV62/TRV72/TRV82/TRV94) 5-83
11 PAL Hi8 REC L Level Adjustment
(VC-190 board) (CCD-TRV64E/TRV94E) 5-84
12. PAL Standerd8 REC L Level Adjustment
(VC-190 board) (CCD-TRV54E/TRV56E) 5-85
13 REC C Current Adjustment (VC-190 board) 5-85
3-5. IR Transmitter Adjustments (CCD-TRV62/TRV72/YRV82) 5-86
1. IR Video Carrier Frequency Adjustment
(MI-27/28 board) 5-86
2. IR Video Deviation Adjustment (MI-27/28 board) 5-86
3. IR Audio Deviation Adjustment (MI-27/28 board) 5-87
3-6 Audio System Adjustment 5-88
1. 1.5 MHz Deviation Adjustment (VC-190 board) 5-89
2. 1 7 MHz Deviation Adjustment (VC-190 board) 5-89
3. BPF fo Adjustment (VC-190 board) 5-90
3-7 Arrangement Diagram for Adjustment Parts 5-92

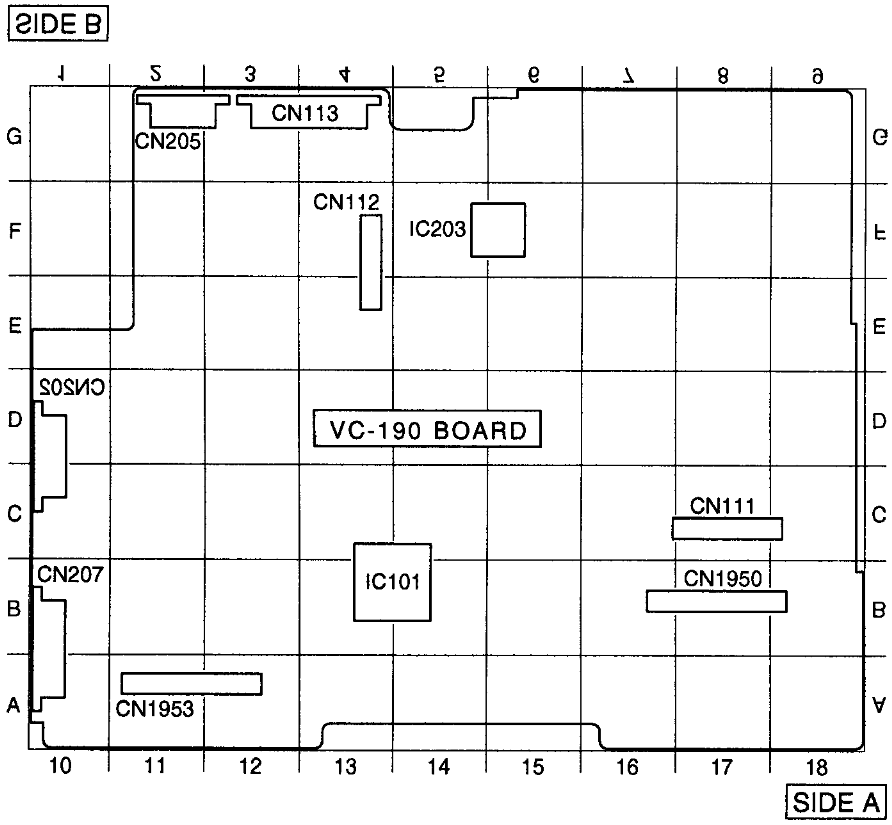
6. REPAIR PARTS LIST
6-1. Exploded Views 6-1
6-1-1. Cabinet (L) Block Assembly (Except TRV64E) 6-1
6-1-2. Front Panel Block Assembly (Except TRV64E) 6-2
6-1-3. 4 Inch LCD Assembly
(TRV56E/TRV82/TRV94/TRV94E) 6-3
6-1-4. 3.5 Inch LCD Assembly (TRV54E/TRV62/TRV72) 6-4
6-1-5. Cabinet (R) Block Assembly (Except TRV64E) 6-5
6-1-6. EVF Block Assembly (Color EVF)
(TRV72/TRV82/TRV94/TRV94E) 6-6
6-1-7. EVF Block Assembly (B/W EVF)
(TRV54E/TRV56E/TRV62) 6-7
6-1-8 Main Boards Assembly (Except TRV64E) 6-8
6-1-9. Battery Panel Block Assembly and
CCD Block Assembly (Except TRV64E) 6-9
6-1-10. Lens Device (VCL-4214VA) 6-10
6-1-11. Cassette Compartment Assembly 6-11
6-1-12. LS Chassis Assembly 6-12
6-1-13. Mechanism Chassis Assembly 6-13
6-1-14. Cabinet (L) Block Assembly (TRV64E) 6-14
6-1-15. Front Panel Block Assembly (TRV64E) 6-15
6-1-16. Cabinet (R) Block Assembly (TRV64E) 6-16
6-1-17. 2.5 Inch LCD Assembly (TRV64E) 6-17
6-1-18. EVF Block Assembly (B/W EVF) (TRV64E) 6-18
6-1-19. Main Boards Assembly (TRV64E) 6-19
6-1-20. Battery Panel Block Assembly and
CCD Block Assembly (TRV64E) 6-20
6-2. Electrical Parts List 6-21

There is the color reproduction standard frame at the back of the book

<PARTS REFERENCE SHEET>

You can find the parts position of mount locations applying to boards of a set.

Take a copy CAMERA COLOR REPRODUCTION FRAME and Parts reference sheets with a clear sheet for use.

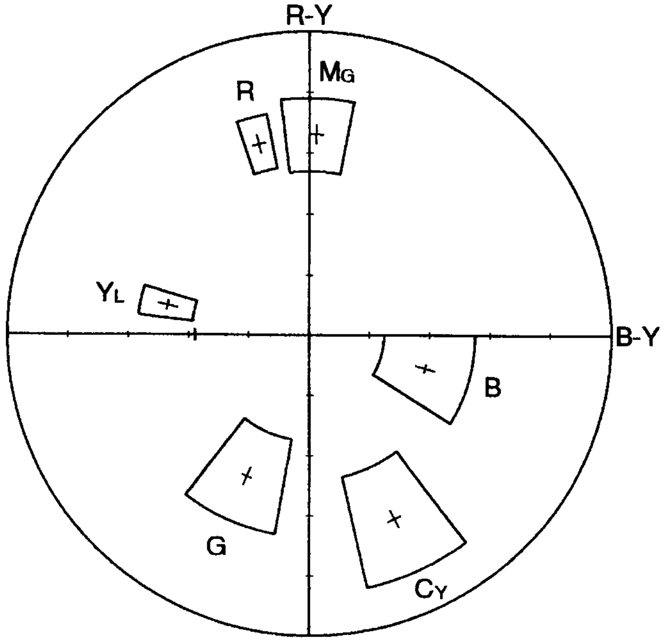

SIDE B
1
2
3
4
5
6
7
8
9
G
F
E
D
C
B
A
CN205
CN113
CN112
IC203
CN202
VC-190 BOARD
CN111
CN207
IC101
CN1950
CN1953
10
11
12
13
14
15
16
17
18
SIDE A

CCD-TRV54E/TRV56E/TRV62/TRV64E/TRV72/TRV82/TRV94/TRV94E

FOR CAMERA COLOR REPLRODUCTION ADJUSTMENT

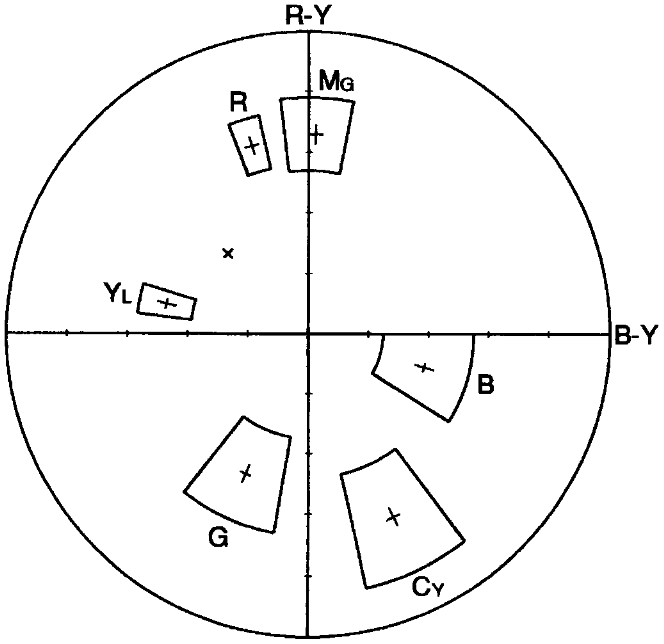
Take a copy CAMERA COLOR REPRODUCTION FRAME and Parts reference sheets with a clear sheet for use.

For NTSC model


R-Y
MG
R
YL
B-Y
B
G
CY

CCD-TRV62/TRV72/TRV82/TRV94

For PAL model


R-Y
MG
R
YL
B-Y
B
G
CY

CCD-TRV54E/TRV56E/TRV64E/TRV94E

9-973-955-11

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SECTION 1
GENERAL

This section is extracted from instruction manual of CCD-TRV94E.

Using this manual

As you read through this manual, buttons and settings on the camcorder are shown in capital letters
e g Set the POWER switch to CAMERA
As indicated with ♪ in the illustrations, you can hear the beep sound to confirm your operation

Note on TV colour systems

TV colour systems differ from country to country To view your recordings on a TV, you need a PAL system-based TV

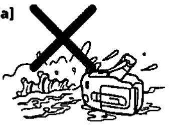
Precaution on copyright

Television programmes, films, video tapes, and other materials may be copyrighted
Unauthorized recording of such materials may be contrary to the provision of the copyright laws

Precautions on camcorder care

- **The LCD screen and/or the colour viewfinder are manufactured using high-precision technology. However, there may be some tiny black points and/or bright points (red, blue or green in colour) that constantly appear on the LCD screen and/or in the viewfinder These points are normal in the manufacturing process and do not affect the recorded picture in any way Over 99 99% are operational for effective use**
- Do not let the camcorder get wet Keep the camcorder away from rain and sea water Letting the camcorder get wet may cause the unit to malfunction, and sometimes this malfunction cannot be repaired [a]
- Never leave the camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight [b]

[a]



Использование данного руководства

Когда Вы будете читать данное руководщство, учитываите, что кнопки и установки на видеокамере показаны заглавными буквами
Прим Установите выключатель POWER в положение CAMERA
Если на рисунках указывается знак "♪", то вы можете слышать зуммерный звуковой сигнал для подтверждения Вашей работы

Примечание по системам цветного телевидения

Системы цветного телевидения отличаются в зависимости от страны Для просмотра Ваших записей по телевизору Вам необходимо использовать телевизор, основанный на системе PAL

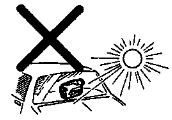
Предостережение об авторском праве

Телевизионные программы, кинофильмы, видеоленты и другие материалы могут быть защищены авторским правом
Неправомочная запись таких материалов может противоречить условиям закона об авторском праве

Предосторожности по уходу за видеокамерой

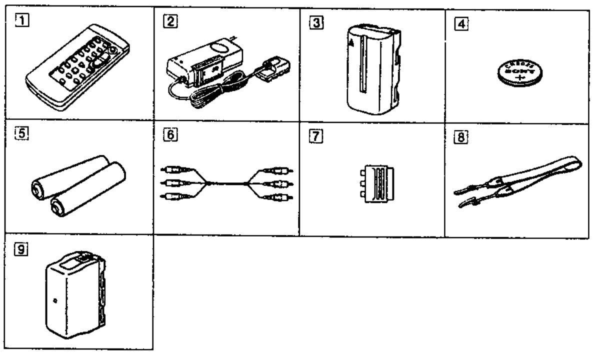
- **Экран ЖКД и/или цветной видоискатель изготовлены с использованием высокопрецизионной технологии Однако на экране ЖКД и/или в видоискателе могут постоянно появляться черные или яркие цветные точки (красные, синие или зеленые) Появление этих точек вполне нормально для процесса съемки и никоим образом не влияет на записываемое изображение. Свыше 99,99% предназначено для эффективного использования**
- Не позволяйте видеокамере делаться влажной Предохраняйте видеокамеру от дождя или морской воды Если Вы намочите видеокамеру, то это может вызвать неисправность аппарата и в некоторых случаях эта неисправность не подлежит ремонту [a]
- Никогда не оставляйте видеокамеру в месте с температурой свыше 60°C (140°F) , как, например в автомобиле, остановленном на солнце или под прямыми солнечными лучами [b]

[b]



Checking supplied accessories

Check that the following accessories are supplied with your camcorder



1 **Wireless Remote Commander** (1) (p 118)

2 **AC-V326 AC power adaptor** (1) (p 7, 31)

3 **NP-F530 Battery pack** (1) (p 7, 31)

4 **CR2025 Lithium Battery** (1) (p 87 88)
The lithium battery is already installed in your camcorder

5 **R6 (size AA) battery for Remote Commander** (2) (p 119)

6 **A/V connecting cable** (1) (p 72)

7 **21 pin adaptor** (1) (p 73)

8 **Shoulder strap** (1) (p 120)

9 **Battery case** (1) (p 32)

Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, video tape, etc

Проверка прилагаемых принадлежностей

Проверьте наличие следующих принадлежностей, прилагаемых к Вашей видеокамере

1 **Беспроводный пульт дистанционного управления** (1) (стр 118)

2 **Сетевой адаптер перем тока AC-V326** (1) (стр 7, 31)

3 **Батарейный блок NP-F530** (1) (стр 7, 31)

4 **Литиевая батарейка CR2025** (1) (стр 87, 88)
Литиевая батарейка уже установлена в Вашей видеокамере

5 **Батарейка R6 (размером AA) для пульта дистанционного управления** (2) (стр 119)

6 **Соединительный кабель аудио/видео** (1) (стр 72)

7 **21-штырьковый адаптер** (1) (стр 73)

8 **Плечевой ремень** (1) (стр 120)

9 **Батарейный футляр** (1) (стр 32)

Содержимое записи не может быть компенсировано если запись или воспроизведение не выполняются вследствие повреждения видеокамеры, видеоленты и т д

Charging and installing the battery pack

Before using your camcorder, you first need to charge and install the battery pack To charge the battery pack, use the supplied AC power adaptor
This camcorder operates with the "InfoLITHIUM' battery If you use any other battery to operate your camcorder, the camcorder may not operate or the battery life may be shorten

"InfoLITHIUM" is a trademark of Sony Corporation

Charging the battery pack

Charge the battery pack on a flat surface without vibration
(1) Connect the mains lead to mains
(2) Align the surface of the battery pack indicated by the ▶ mark with the edge of the terminal shutter of the AC power adaptor Then fit and slide the battery pack in the direction of the arrow The CHARGE lamp (orange) lights up Charging begins

When the CHARGE lamp goes out, **normal charge** is completed For **full charge**, which allows you to use the battery longer than usual, leave the battery pack in place for approximately one hour Unplug the unit from the mains, then remove the battery pack and install it into the camcorder You can also use the battery pack before it is completely charged

Зарядка и установка батарейного блока

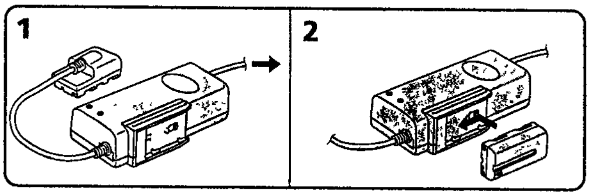
Перед использованием Вашей видеокамеры Вам нужно сначала зарядить и установить батарейный блок Для зарядки батарейного блока используйте прилагаемый сетевой адаптер перем тока
Данная видеокамера работает только от батарейного блока "InfoLITHIUM" Если Вы используете какой-либо другой батарейный блок для работы с Вашей видеокамерой, видеокамера может не работать, или срок службы заряда батарейного блока будет короче

"InfoLITHIUM" является товарным знаком корпорации Sony

Зарядка батарейного блока

Заряжайте батарейный блок на плоской поверхности без вибрации
(1) Подсоедините сетевой провод к электрической сети
(2) Совместите поверхность батарейного блока, отмеченную знаком "▶", с краем входной задвижки сетевого адаптера перем тока Затем приложите и сдвигайте батарейный блок в направлении стрелки Загорится лампочка CHARGE (оранжевая) Зарядка началась

Когда лампочка CHARGE погаснет, **нормальная зарядка** будет завершена Для **полной зарядки** которая позволит ам использовать батарейный блок дольше, чем обычно, оставьте батарейный блок на месте приблизительно на один час Отсоедините аппарат от электрической сети, а затем снимите батарейный блок и установите его на видеокамеру Вы также можете использовать батарейный блок до того, как он полностью зарядится



Charging and installing the battery pack

Charging time

Battery pack	Charging time* (min)
NP-F530 (supplied)	170 (110)
NP-F730	250 (190)
NP-F930	330 (270)

The time required for a normal charge is indicated in parentheses
* Approximate minutes to charge an empty battery pack using the supplied AC power adaptor (Lower temperatures require a longer charging time)

Battery life

Upper numbers are the time when recording with the viewfinder Lower numbers are the time when recording with the LCD screen Using both will further reduce recording time

Battery pack	Continuous recording time*	Typical recording time**	Playing time on LCD
NP-F530 (supplied)	150 (135) 95 (85)	85 (75) 35 (50)	95 (85)
NP-F730	305 (275) 210 (190)	175 (155) 120 (110)	210 (190)
NP-F930	480 (435) 325 (295)	275 (250) 185 (170)	325 (295)

Numbers in parentheses indicate the time when you use a normally charged battery
Battery life will be shorter if you use the camcorder in a cold environment
* Approximate continuous recording time indoors
** Approximate minutes when recording while you repeat recording start/stop, zooming and turning the power on/off The actual battery life may be shorter

Notes on remaining battery time indication during recording
- Remaining battery time is displayed in the viewfinder or on the LCD screen However, the indication may not be displayed properly, depending on using conditions and circumstances
- When you close the LCD panel and open it again, it takes about 1 minute for the correct remaining time to be displayed

Зарядка и установка батарейного блока

Время зарядки

Батареиный блок	Время зарядки* (мин)
NP F530 (прилагается)	170 (110)
NP F730	250 (190)
NP-F930	330 (270)

Время требуемое для нормальной зарядки, указано в скобках
* Приблизительное время в минутах для зарядки разряженного батареиного блока с использованием прилагаемого сетевого адаптера перем тока (При низких температурах время зарядки будет длиннее)

Срок службы заряда батарейного блока

Верхние числа указывают время, когда запись производится с помощью видоискателя Нижние числа указывают время, когда запись производится с помощью экрана ЖКД Использование обоих будет значительно уменьшать время записи

Батарейный блок	Время непрерывной записи*	Время типичной записи**	Время вопроизведения на ЖКД
NP F530 (прилагается)	150 (135) 95 (85)	85 (75) 55 (50)	95 (85)
NP F730	305 (275) 210 (190)	175 (155) 120 (110)	210 (190)
NP F930	480 (435) 325 (295)	275 (250) 185 (170)	325 (295)

Числа в скобках указывают время, когда Вы используете нормально заряженный батарейный блок
Срок службы батарейного блока будет короче если Вы используете видеокамеру в холодных условиях
* Приблизительное время непрерывной записи в помещении
** Приблизительное время в минутах при записи, когда Вы повторяете начало/останов записи, наезд видеокамеры и включение/выключение питания Фактический срок службы заряда батареиного блока может быть короче

Примечания относительно оставшегося времени работы батарейного блока во время записи
- Время оставшегося заряда батарейного блока отображается в видоискателе или на экране ЖКД Однако индикация может отображаться не точно в зависимости от условий и обстоятельств
- Если Вы закрываете панель ЖКД и открываете ее снова то проходит приблизительно 1 минута до отображения правильного оставшегося времени

Charging and installing the battery pack

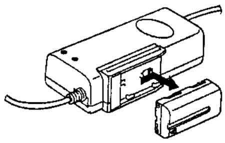
Зарядка и установка батарейного блока

To remove the battery pack

Slide the battery pack in the direction of the arrow

Для снятия батарейного блока

Передвиньте батареиныи блок в направлении стрелки



Notes on charging the battery pack

- The CHARGE lamp will remain lit for a while even if the battery pack is removed and the mains lead is unplugged after charging the battery pack This is normal
- If the CHARGE lamp does not light, disconnect the mains lead After about one minute, reconnect the mains lead again
- You cannot operate the camcorder using the AC power adaptor while charging the battery pack
- When a fully charged battery pack is installed the CHARGE lamp will light once then go out

Примечания по зарядке батарейного блока

- Лампочка CHARGE остается на некоторое время горящей, даже если батарейный блок снят и сетевой провод отсоединен от сети после зарядки батарейного блока Это является нормальным
- Если лампочка CHARGE не горит то отсоедините сетевой провод Приблизительно через одну минуту подсоедините сетевой провод снова
- Вы не можете увправлять видеокамерой с использованием сетевого адаптера перем тока во время зарядки батарейного блока
- Когда установлен полностью заряженный батареиный блок лампочка CHARGE загорится один раз а затем погаснет

Charging and installing the battery pack

Зарядка и установка батарейного блока

Installing the battery pack

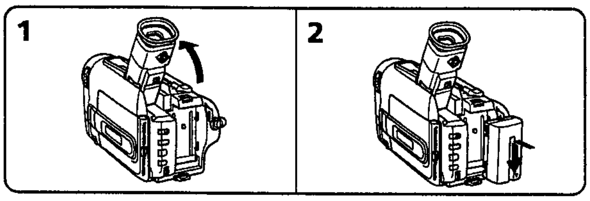
(1) Lift up the viewfinder
(2) Insert the battery pack in the direction of the ▼ mark on the battery pack Slide the battery pack down until it catches on the battery release lever and clicks

Attach the battery pack to the camcorder securely

Зарядка и установка батарейного блока

(1) Поднимите видоискатель
(2) Установите батарейныи блок в направлении знака "▼" на батареином блоке Сдвигайте батарейный блок вниз, пока он не будет захвачен рычагом отблокировки батарейного блока и не защелкнется

Присоедините надежно батарейный блок к видеокамере



Note on installing the NP-F930 battery pack
Use the camcorder while lifting up the viewfinder slightly

Note on the battery pack
Do not carry the camcorder by grasping the battery pack

To remove the battery pack

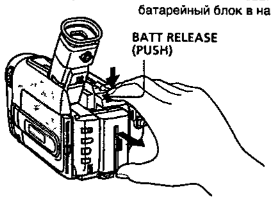
While pressing BATT RELEASE (PUSH), slide the battery pack in the direction of the arrow

Примечание по установке батарейного блока NP-F930
Используйте видеокамеру, слегка приподняв видоискатель

Примечание по батарейному блоку
Не переносите видеокамеру путем захвата ее за батарейный блок

Для снятия батарейного блока

Нажимая BATT RELEASE (PUSH), сдвиньте батарейный блок в направлении стрелки



You can look at the demonstration of the functions available with this camcorder (p 37)

Вы можете наблюдать за демонстрацией функций, имеющихся в данной видеокамере (37)

Inserting a cassette

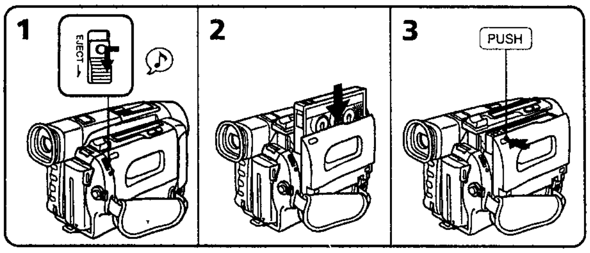
Вставка кассеты

Make sure that the power source is installed
When you want to record in the Hi8 system, use Hi8 video cassette Hi8

(1) While pressing the small blue button on the EJECT switch, slide it in the direction of the arrow The cassette compartment automatically lifts up and opens
(2) Insert a cassette with the window facing out
(3) Close the cassette compartment by pressing the "PUSH" mark on the cassette compartment The cassette compartment automatically goes down

Убедитесь, что источник питания установлен
Если Вы хотите выполнить запись в системе Hi8, то используйте Hi8-видеокассету Hi8

(1) Нажимая маленькую синюю кнопку на выключателе EJECT, сдвиньте его в направлении стрелки Отсек кассеты автоматически поднимается вверх и открывается
(2) Вставьте кассету окошком обращенным наружу
(3) Закройте отсек кассеты, нажимая знак "PUSH" на отсеке кассеты Отсек кассеты автоматически опускается вниз



To eject the cassette

While pressing the small blue button on the EJECT switch, slide it in the direction of the arrow

To prevent accidental erasure

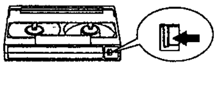
Slide the tab on the cassette to expose the red mark If you insert the cassette with the red mark exposed and close the cassette compartment, the beeps sound for a while If you try to record with the red mark exposed, the 🄴 and ⏏ indicators flash, and you cannot record
To re-record on this tape, slide the tab back out covering the red mark

Для выталкивания кассеты

Нажимая маленькую синюю кнопку на выключателе EJECT сдвиньте его в направлении стрелки

Для предотвращения случайного стирания

Передвиньте лепесток на кассете так чтобы показалась красная метка Если Вы вставите кассету с выставленной красной меткой и закроете отсек кассеты, то в течение некоторого времени будет звучать зуммерный звуковой сигнал Если Вы попытаетесь произвести запись при выставленной красной метке, индикаторы 🄴 и ⏏ будут мигать и Вы не сможете выполнить запись
Для повторной записи на такую кассету передвиньте лепесток назад, чтобы закрыть красную метку



Basic operations

Camera recording

Основные операции

Запись с помощью видеокамеры

Make sure that the power source is installed and a cassette is inserted and that the START/STOP MODE switch inside the LCD panel is set to ⚠
Before you record one-time events, you may want to make a trial recording to make sure that the camcorder is working correctly
When you use the camcorder for the first time power on it and reset the date and time to your time before you start recording (p 89)
To save battery power, the picture in the viewfinder appears only when you bring your face close to the viewfinder with STANDBY up **(Finder power save)**

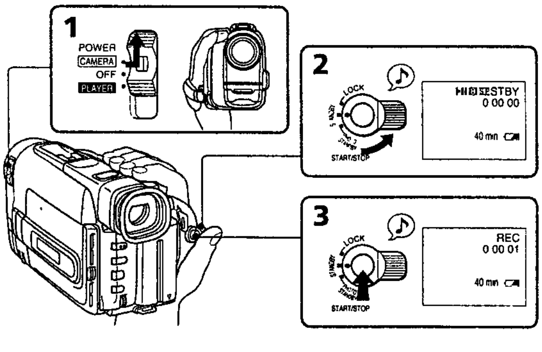
(1) While pressing the small green button on the POWER switch, set it to CAMERA
(2) Turn STANDBY up to STANDBY
(3) Press START/STOP The camcorder starts recording The "REC" indicator appears The camera recording/battery lamp located on the front of the camcorder also lights up

You can also select Recording mode, SP (standard play) mode or LP (long play) mode Set REC MODE in the menu system according to the length of your planned recording before you start

Убедитесь что источник питания установлен кассета вставлена и что переключатель START/STOP MODE на панели ЖКД установлен на ⚠
Перед тем как Вы начнете запись одноразовых событий, Вы можете захотеть сделать пробную запись для подтверждения, что видеокамера работает правильно
Если Вы используете видеокамеру в первый раз, то включите питание и установите дату и время на Ваше местное время перед началом записи (стр 89)
Для экономии заряда батарейного блока изображение в видоискателе появляется только тогда когда Вы приближаете Ваше лицо к видоискателю с установкой STANDBY вверх **(экономия заряда батарейного блока)**

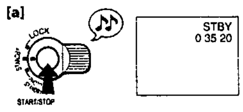
(1) Нажимая маленкую зеленую кнопку на выключателе POWER, сдвиньте его в положение CAMERA
(2) Поверните STANDBY в положение STANDBY
(3) Нажмите START/STOP Видеокамера начинает запись Появится индикатор "REC" Лампочка записи камерой/батареи, расположенная спереди видеокамеры также будет гореть

Вы также можете выбирать режим записи режим SP (стандартное воспроизведение) или режим LP (долгоиграющее воспроизведение) Перед началом записи установите REC MODE в системе меню в соответствии с продолжительностью Вашей планируемой записи



To stop recording momentarily [a]
Press START/STOP again The "STBY" indicator appears in the viewfinder **(Standby mode)**

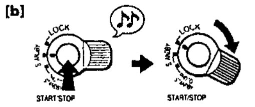
To finish recording [b]
Press START/STOP again Turn STANDBY down to LOCK and set the POWER switch to OFF Then eject the cassette and remove the battery pack



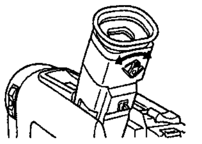
To focus the viewfinder lens
If you cannot see the indicators in the viewfinder clearly, or after someone else has used the camcorder, focus the viewfinder lens Move the viewfinder lens adjustment lever so that the indicators in the viewfinder come into sharp focus

Для временной остановки записи [a]
Снова нажмите START/STOP Индикатор STBY" появится в видоискателе **(режим готовности)**

Для окончания записи [b]
Снова нажмите START/STOP Поверните STANDBY в положение LOCK и установите выключатель POWER в положение OFF Затем вытолкните кассету и снимите батарейный блок



Для фокусировки объектива видоискателя
Если индикаторы в объективе видоискателя видны не четко или же после того как кто-либо другой использовал видеокамеру, следует сфокусировать объектив видоискателя Передвиньте рычаг регулировки объектива видоискателя так чтобы индикаторы в видоискателе были четко сфокусированы



Note on the lighting aperture
If direct sunlight enters the lighting aperture the picture in the viewfinder appears brighter
When this happens, colours in the viewfinder may change

Примечание к световой апертуре
Если прямые солнечные лучи воздействуют на световую апертуру то изображение в видоискателе делается ярче Когда это происходит, цвета в видоискателе могут измениться

Note on Standby mode
If you leave the camcorder in Standby mode for 5 minutes while the cassette is inserted, the camcorder turns off automatically This prevents wearing down the battery and wearing out the tape To resume Standby mode, turn STANDBY down and up again To start recording, press START/STOP

Notes on recording mode
- This camcorder records and plays back in SP (standard play) mode and in LP (long play) mode The playback quality in LP mode, however, will not be as good as that in SP mode
- When a tape recorded on this camcorder in LP mode is played back on other types of 8mm camcorders or VCRs, the playback quality may not be as good as that on this camcorder

Note on recording
When you record from the beginning of a tape, run the tape for about 15 seconds before starting the actual recording This will ensure that you won t miss any start-up scenes when you play back the tape

Notes on the tape counter
- The tape counter indicates the recording or playback time Use it as a guide There will be a time lag of several seconds from the actual time To set the counter to zero, press COUNTER RESET
- If the tape is recorded in SP and LP modes mixed, the tape counter shows incorrect recording time When you intend to edit the tape using the tape counter as a guide, record in same (SP or LP) mode

Note on the beep sound
As indicated with ♪ in the illustration, a beep sounds when you turn the power on or when you start recording, and two beeps sound when you stop recording, confirming the operation Several beeps also sound as a warning of any unusual condition of the camcorder
Note that the beep sound is not recorded on the tape If you do not want to hear the beep sound, select "OFF" in the menu system

Примечание к режиму готовности
Если Вы оставите видеокамеру в режиме готовности на 5 минут со вставленной кассетой, то видеокамера выключится автоматически Это предотвращает расход заряда батарейного блока и износ ленты Для восстановления режима готовности поверните STANDBY вниз и снова вверх Для начала записи нажмите START/STOP

Примечания к режиму записи
- Данная видеокамера записывает и воспроизводит в режиме LP (стандартного воспроизведения) или в режиме SP (удлиненного воспроизвдения) Однако, качество воспроизведения в режиме LP будет не таким хорошим, как в режиме SP
- Если лента, записанная на данной видеокамере в режиме LP, будет воспроизводиться на других видеокамерах или КВМ на 8-мм ленте, то качество воспроизведения может быть не таким хорошим, как на данной видеокамере

Примечание относительно записи
Если Вы выполняете запись с начала ленты обеспечьте перемотку ленты вперед примерно на 15 секунд, прежде, чем начать запись Это позволит Вам не пропустить каких либо сцен в начале записи и впоследствии возпроизвести все полностью

Премечания к счетчику ленты
- Счетчик ленты показывает время записи или воспроизведения Используйте его в качестве руководства Существует отставание по времени на несколько секунд от фактического времени Для установки счетчика на нуль нажмите кнопку COUNTER RESET
- Если лента записана с чередованием режимов SP и LP, то счетчик ленты будет показывать неправильное время Если Вы намереваетесь производить монтаж с помощью счетчика ленты, который принимается за основу, то выполняйте запись в одном и том же режиме (SP или LP)

Примечание к зуммерному звуковому сигналу
Как указано на рисунках с помощью ♪, один зуммерный сигнал звучит, когда Вы включаете питание или начинаете запись, и два зуммерных сигнала звучат, когда Вы останавливаете запись, подтверждая тем самым работу Несколько зуммерных сигналов также звучит в качестве предупреждения какого-либо необычного состояния видеокамеры
Заметьте, что зуммурный сигнал не записывается на ленту Если Вы не хотите сльшать зуммерный звуковой сигнал, то выберите OFF в системе меню

Notes on finder power save
- The recording continues even when the picture in the viewfinder disappears during recording
- If you set VF PW-SAVE to OFF in the menu system the picture in the viewfinder does not disappear even when you turn your face away from the viewfinder

When moving from indoors to outdoors (or vice versa)
Turn STANDBY up and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted

Using the zoom feature

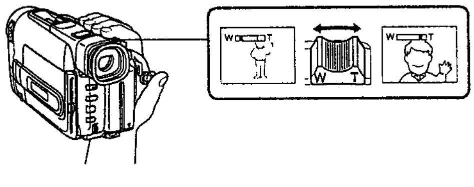
Zooming is a recording technique that lets you change the size of the subject in the scene
For more professional-looking recordings, use the zoom function sparingly
T" side for telephoto (subject appears closer)
"W ' side for wide-angle (subject appears farther away)

Примечания к экономии заряда батарейного блока
- Запись продолжается, даже если изображение исчезает из видоискателя во время записи
- Если Вы установите VF PW-SAVE на OFF в системе меню, то изображение не будет исчезать даже если Вы удаляете свое лицо от видоискателя

При выходе из помещения на улицу (или наоборот)
Поверните STANDBY вверх и наведите видеокамеру на белый объект приблизительно на 15 секунд так, чтобы баланс белого был отрегулирован правильно

Использование функции наезда видеокамеры

Наезд видеокамеры является техническим приемом записи, который позволяет Вам изменять размер объекта в кадре
Для более профессионального вида записей умеренно используйте функцию наезда видеокамеры
Сторона "T" для телефото (объект приближается)
Сторона "W" для широкого угла съемки (объект удаляется)



Zooming speed (Variable speed zooming)
Move the power zoom lever a little for a slower zoom move it further for a faster zoom

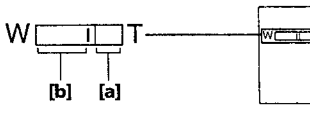
When you shoot a subject using a telephoto zoom
If you cannot get a sharp focus while in extreme telephoto zoom, move the power zoom lever to the 'W' side until the focus is sharp You can shoot a subject that is at least about 80 cm (about 2 5/8 feet) away from the lens surface in the telephoto position or about 1 cm (about 1/2 inch) away in the wide-angle position

Notes on digital zoom
- More than 15x zoom is performed digitally, and the picture quality deteriorates as you go toward the T ' side If you do not want to use the digital zoom, set the D ZOOM function to OFF in the menu system
- The right side **[a]** of the power zoom indicator shows the digital zooming zone, and the left side **[b]** shows the optical zooming zone If you set the D ZOOM function to OFF, the **[a]** zone disappears

Скорость наезда видеокамеры (наезд с различной скоростью)
Передвиньте рычаг приводного трансфокатора немного для медленного наезда, передвиньте его дальше для быстрого наезда

Когда Вы снимаете объект, используя наезд в режиме телефото
Если Вы не можете получить четкой фокусировки во время крайнего наезда в режиме телефото то перемещаите рычаг приводного тасфокатора в сторону "W" до тех пор, пока не получите четкои фокусировки Вы можете произвести съемку предмета который по меньшей мере находится на расстоянии около 80 см от поверхности объектива в положении телефото, или на расстоянии около 1 см в положении широкого угла

Примечания к цифровому трансфокатору
- Трансфокатор более чем 15x, создан в цифровом исполнении и качество изображения ухудшается по мере Вашего движения в сторону "T" Если Вы не хотите использовать цифровой трансфокатор, то установите функцию D ZOOM на OFF в системе меню
- Правая сторона [a] индикатора приводного трансфокатора показывает зону цифровой трансфокации, а левая сторона **[b]** показывает зону оптической трансфокации Если Вы установите функцию D ZOOM на OFF, то зона [a] исчезнет



Selecting the START/STOP mode

Your camcorder has two modes besides normal start/stop mode These modes enable you to take a series of quick shots resulting in a lively video

(1) While pressing OPEN, open the LCD panel
(2) Set START/STOP MODE to the desired mode
 ♙ Recording starts when you press START/STOP, and stops when you press it again (normal mode)
 ANTI GROUND SHOOTING ⊥ The camcorder records only while you press down START/STOP so that you can avoid recording unnecessary scenes
 5SEC When you press START/STOP, the camcorder records for 5 seconds and then stops automatically
(3) Turn STANDBY up to STANDBY and press START/STOP Recording starts

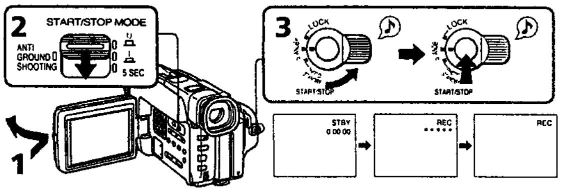
If you selected 5SEC, the remaining tape indicator disappears and five dots appear The dots disappear at a rate of one per second as illustrated below

Выбор режима START/STOP

В Вашей видеокамере имеется два режима помимо обычного режима пуска/остановки Эти режимы позволяют Вам выполнить серию коротких съемок для создания оживленного видеосюжета

(1) Нажимая OPEN, откройте панель ЖКД
(2) Установите START/STOP MODE на желаемый режим
 ♙ Запись начинается когда Вы нажимаете кнопку START/STOP и останавливается когда Вы нажимаете ее снова (обычныи режим)
 ANTI GROUND SHOOTING ⊥ Видеокамера выполняет запись только тогда, когда Вы нажмете кнопку START/STOP, поэтому Вы сможете избежать записи ненужных сцен
 5SEC При нажатии START/STOP видеокамера производит запись в течение 5 секунд, а затем останавливается автоматически
(3) Поверните STANDBY вверх и нажмите START/STOP Запись начинается

Если Вы выбрали режим 5SEC, индикатор оставшейся ленты исчезнет и появятся пять точек Точки будут исчезать со скоростью одна за секунду как показано на рисунке



To extend the recording time in 5SEC mode

Press START/STOP again before all the dots disappear Recording continues for about 5 seconds from the moment you press START/STOP

Notes on START/STOP mode
- If you have turned off the indicators on the LCD screen, the dots do not appear
- You cannot use FADER in 5SEC or ⊥ mode

Для продления времени записи в режиме 5SEC

Нажмите START/STOP опять до того, как все точки исчезнут Запись продолжается еще около 5 секунд с момента нажатия START/STOP

Примечание к режиму START/STOP
- Если Вы выключите индикаторы на экране ЖКД, точки появляться не будут
- Вы не можете использовать FADER в режиме 5SEC или ⊥

Shooting with the LCD screen

You can also record the picture while looking at the LCD screen

When using the LCD screen the viewfinder turns off automatically You cannot monitor the sound from the speaker during recording

(1) While pressing OPEN open the LCD panel
(2) Adjust the angle of the LCD panel
 The LCD panel moves about 90 degrees to this side and about 210 degrees to the other side
 To adjust the brightness of the LCD screen press LCD BRIGHT
 + side to brighten the LCD screen
 – side to dim the LCD screen

The battery life is longer when the LCD panel is closed Use the viewfinder instead of the LCD screen to save the battery power

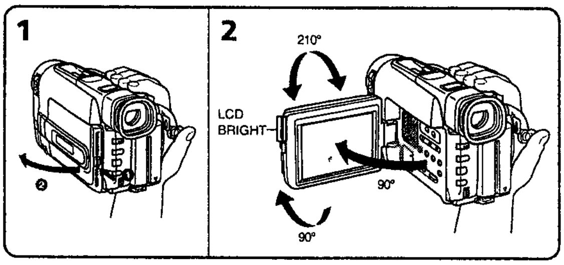
Съемка с помощью экрана ЖКД

Вы также можете осуществлять запись изображения, просматривая его на экране ЖКД

При использовании экрана ЖКД видоискатель выключится автоматически Вы не можете прослушивать звук от громкоговорителя во время записи

(1) Нажимая OPEN, откройте панель ЖКД
(2) Отрегулируйте угол панели ЖКД
 Панель ЖКД перемещается приблизительно на 90 градусов в одну сторону и на 210 градусов в другую сторону
 Для регулировки яркости экрана ЖКД нажмите LCD BRIGHT
 Сторона + для более яркого экрана ЖКД
 Сторона – для более тусклого экрана ЖКД

Срок службы заряда батарейного блока будет длинее, если ЖКД панель закрыта Используйте видоискатель вместо экрана ЖКД для экономии заряда батарейного блока



Backlighting the LCD screen

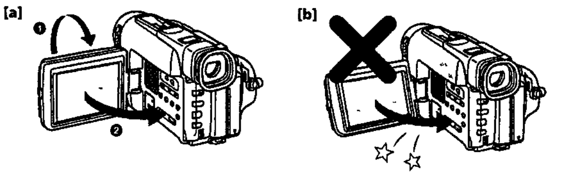
If the LCD screen is insufficiently illuminated even after adjusting LCD BRIGHT, select LCD B L in the menu system and set to BRIGHT You can select LCD B L only while using the battery pack as a power source

Задняя подсветка экрана ЖКД

Если экран ЖКД недостаточно освещен даже после регулировки с помощью LCD BRIGHT, выберите в системе меню LCD B L и установите его в положение BRIGHT Вы можете выбрать LCD B L только во время использования батарейного блока в качестве источника питания

Notes on the LCD panel
- When closing the LCD panel, turn it vertically until it clicks **[a]**
- When turning the LCD panel, turn it always vertically, otherwise, the camcorder body may be damaged or the LCD panel may not close properly **[b]**
- Close the LCD panel completely when not in use

Примечания к панели ЖКД
- При закрывании панели ЖКД поворачивайте ее вертикально, пока она не защелкнется **[a]**
- При поворачивании панели ЖКД, поворачивайте ее всегда вертикально или, в противном случае, корпус видеокамеры может быть поврежден или панель ЖКД не сможет закрыться правильно **[b]**
- Полностью закройте панель ЖКД, когда она не используется



Letting the subject monitor the shot

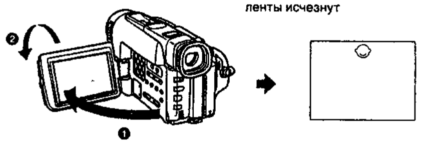
You can turn the LCD panel over so that it faces the other way and you can let the subject monitor the shot while shooting with the viewfinder

Turn the LCD panel vertically first until it clicks, then turn it over The ⍜ indicator appears on the LCD screen **(Mirror mode)** and the date and remaining tape indicators disappear

Возможность для снимаемого человека наблюдать съемку

Вы можете перевернуть панель ЖКД, так, что она будет обращена в другую сторону и Вы можете дать возможность снимаемому человеку наблюдать съемку, снимая с помощью видоискателя

Сперва поворачивайте панель ЖКД вертикально, пока она не защелкнется, а затем переверните ее Индикатор ⍜ появится на экране ЖКД (зеркальный режим), и индикаторы даты и оставшейся ленты исчезнут



To Cancel Mirror Mode

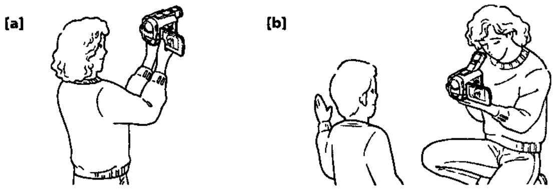
Turn the LCD panel back toward the viewfinder

Для отмены зеркального режима

Поверните панель ЖКД назад в направлении видоискателя

Notes on mirror mode
- When you turn the LCD panel about 135 degrees to 210 degrees, the camcorder enters mirror mode
- Using the mirror mode, you can record yourself while watching yourself on the LCD **[a]**
- The picture on the LCD looks as a mirror-image while recording in mirror mode **[b]** The STBY indicator appears as ●II and REC as ● The other indicators may not appear in mirror mode
- While recording in mirror mode, you cannot operate the following buttons TITLE, DATE, TIME, MENU, and ZERO MEM on the Remote Commander

Примечания к зеркальному режиму
- Если Вы повернете панель ЖКД приблизительно до диапазона от 135 градусов до 210 градусов, то видеокамера войдет в зеркальный режим
- Используя зеркальный режим, Вы можете записывать себя на ленту, просматривая свое изображение на ЖКД **[a]**
- Изображение на ЖКД выглядит, как зеркальное отображение во время записи в зеркальном режиме **[b]** Индикатор STBY появляется в виде ●II и REC в виде ● Другие индикаторы могут не появиться в зеркальном режиме
- Во время записи в зеркальном режиме Вы не можете управлять следующими кнопками TITLE, DATE TIME MENU и ZERO MEM на пульте дистанциогнного управления



Hints for better shooting

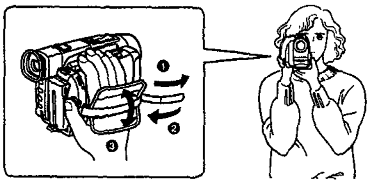
Советы для лучшей съемки

For hand-held shots, you'll get better results by holding the camcorder according to the following suggestions

- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb

Для кадров при удерживании видеокамеры в руках, Вы *получите лучшие результаты, если* будете держать видеокамеру в соответствии со следующими указаниями

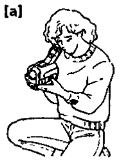
- Держите видеокамеру крепко и закрепите ее с помощью ременного захвата так, чтобы Вы могли легко манипулировать регуляторами с помощью большого пальца



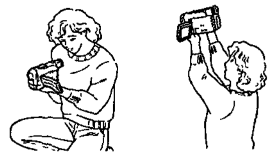
- Place your right elbow against your side
- Place your left hand under the camcorder to support it Be sure to not touch the built-in microphone
- Place your eye firmly against the viewfinder eyecup
- Use the viewfinder frame as a guide to *determine the horizontal plane*
- You can also record in a low position to get an interesting angle Lift the viewfinder up for *recording from a low position* **[a]**
- You can also record in a low position or even in a high position using the LCD panel **[b]**
- When you use the LCD screen outdoors in direct sunlight, the LCD screen may be difficult to see If this happens, we recommend that you use the viewfinder

- Расположите Ваш правый локоть сбоку от себя
- Расположите Ваш левую руку под видеокамерой для ее поддержки Ни в коем *случае не трогайте встроенный микрофон*
- Надежно прислоните Ваш глаз к окуляру видоискателя
- Используйте визирную рамку в качестве руководства для определения горизонтального плана
- Вы можете также записывать из низкого положения для получения интересного угла Поднимите видоискатель вверх для записи из низкого положения **[a]**
- *Вы также можете снимать из низкого* положения или даже из высокого положения с использованием панели ЖКД **[b]**
- Если Вы используете экран ЖКД на улице под прямыми солнечными лучами то изображения на экране ЖКД может быть трудно просматриваемым

[a]



[b]



Hints for better shooting

Советы для лучшей съемки

Place the camcorder on a flat surface or use a tripod

Try placing the camcorder on a table top or any other flat surface of suitable height If you have a tripod for a still camera, you can also use it with the camcorder

When attaching a non-Sony tripod, make sure that the length of you cannot attach the tripod securely and the tripod screw is less than 6 5 mm (9/32 inch) Otherwise you cannot attach the tripod securely and the screw may damage the camcorder

Cautions on the viewfinder and the LCD

- Do not pick up the camcorder by the viewfinder or by the LCD panel **[c]**
- Do not place the camcorder so as to point the *viewfinder or the LCD screen toward the sun* The inside of the viewfinder may be damaged Be careful when placing the camcorder under sunlight or by a window **[d]**

Располагайте видеокамеру на плоской поверхности или используйте треногу

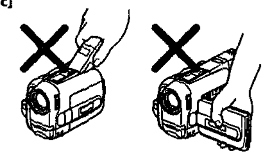
Старайтесь распологать видеокамеру на столе или любой другой плоской поверхности на подходящей высоте Если Вы имеете треногу для фотоаппарата, то Вы также можете использовать ее с видеокамерой

При прикреплении треноги не фирмы Sony убедитесь, что длина винта треноги менее 6,5 мм В противном случае Вы не сможете прикрепить треногу надежно и винт может повредить видеокамеру

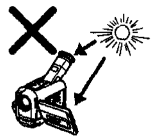
Предостережения к видоискателю и ЖКД

- Не поднимайте видеокамеру за видоискатель или панель ЖКД **[c]**
- Не располагайте видеокамеру так, чтобы видоискатель или экран ЖКД были направлены прямо на солнце Внутренние части видоискателя могут быть *повреждены Будьте осторожны при* расположение видеокамеры под солнцем или возле окна **[d]**

[c]



[d]



Checking the recorded picture

Проверка записанного изображения

Using EDITSEARCH, you can review the last recorded scene or check the recorded picture in the viewfinder or on the LCD screen

(1) While pressing the small green button on the POWER switch, set it to CAMERA

(2) *Turn STANDBY up to STANDBY*

(3) Press the – (⊜) side of EDITSEARCH momentarily, the last few seconds of the recorded portion play back **(Rec Review)**

You can monitor the sound from the speaker or headphone

Hold down the – side of EDITSEARCH until the camcorder goes back to the scene you want The last recorded portion is played back To go forward, hold down the + side **(Edit Search)**

Используя EDITSEARCH, Вы можете пересмотреть последнюю записанную сцену или проверить записанное изображение в видоискателе или на экране ЖКД

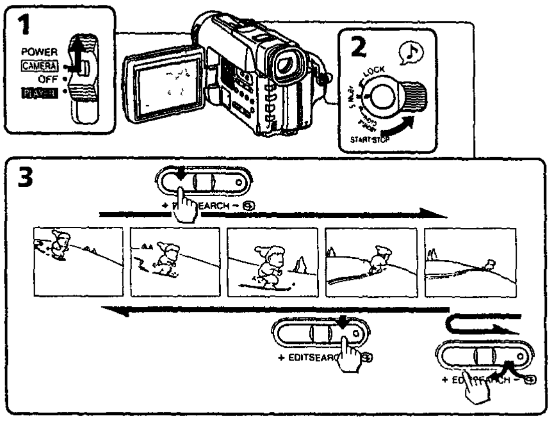
(1) Нажимая маленькую зеленую кнопку на *выключателе POWER, установите его в* положение CAMERA

(2) Поверните STANDBY в положение STANDBY

(3) Ненадолго нажмите сторону – (⊜) кнопки EDITSEARCH, последние несколько секунд записанной части будут воспроизведены **(пересмотр записи)**

Вы можете контролировать звук через акустическую систему или головные телефоны

Держите сторону – кнопки EDITSEARCH до тех пор, пока видеокамера не вернется к желаемой сцене Последняя записанная часть будет воспроизведена Для продвижения вперед держите сторону + **(монтажный поиск)**



Checking the recorded picture

Проверка записанного изображения

To stop playback

Release EDITSEARCH

To go back to the last recorded point after edit search

Press END SEARCH The last recorded point is played back for about 5 seconds (10 seconds in LP mode) and stops Note that this function does not work once you eject the cassette after you recorded on the tape

To begin re-recording

Press START/STOP Re-recording begins from the point you released EDITSEARCH Provided *you do not eject the cassette, the transition* between the last scene you recorded and the next scene you record will be smooth

Для останова воспроизведения

Нажмите EDITSEARCH

Для возврата к последнему записанному месту после монтажного поиска

Нажмите END SEARCH Последнее записанное место будет воспроизводится в течение 5 секунд (10 секунд в режиме LP), а затем лента остановится Заметьте что данная функция не работает если Вы вытолкнете кассету после записи ленты

Для начала перезаписи

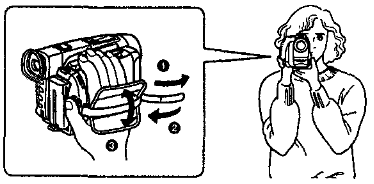
Нажмите START/STOP Перезапись начинается от точки где Вы отпустили EDITSEARCH Предусмотрено, чтобы Вы не *вытолкнули кассету, и переход между* последней сценой которую Вы записали, и следующей сценой, которую Вы записываете, будет плавным

Hints for better shooting

Советы для лучшей съемки

For hand-held shots, you'll get better results by holding the camcorder according to the following suggestions
- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb

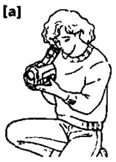
Для кадров при удерживании видеокамеры в руках, Вы получите лучшие результаты если будете держать видеокамеру в соответствии со следующими указаниями
- Держите видеокамеру крепко и закрепите ее с помощью ременного захвата так, чтобы Вы могли легко манипулировать регуляторами с помощью большого пальца



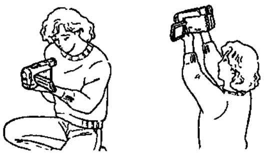
- Place your right elbow against your side
- Place your left hand under the camcorder to support it Be sure to not touch the built-in microphone
- Place your eye firmly against the viewfinder eyecup
- Use the viewfinder frame as a guide to determine the horizontal plane
- You can also record in a low position to get an interesting angle Lift the viewfinder up for recording from a low position **[a]**
- You can also record in a low position or even in a high position using the LCD panel **[b]**
- When you use the LCD screen outdoors in direct sunlight, the LCD screen may be difficult to see If this happens, we recommend that you use the viewfinder

- Расположите Ваш правый локоть сбоку от себя
- Расположите Ваш левую руку под видеокамерой для ее поддержки Ни в коем случае не трогайте встроенный микрофон
- Надежно прислоните Ваш глаз к окуляру видоискателя
- Используйте визирную рамку в качестве руководства для определения горизонтального плана
- Вы можете также записывать из низкого положения для получения интересного угла Поднимите видоискатель вверх для записи из низкого положения [a]
- Вы также можете снимать из низкого положения или даже из высокого положения с использованием панели ЖКД [b]
- Если Вы используете экран ЖКД на улице под прямыми солнечными лучами, то изображения на экране ЖКД может быть трудно просматриваемым

[a]



[b]



Hints for better shooting

Советы для лучшей съемки

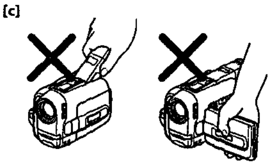
Place the camcorder on a flat surface or use a tripod
Try placing the camcorder on a table top or any other flat surface of suitable height If you have a tripod for a still camera, you can also use it with the camcorder
When attaching a non-Sony tripod, make sure that the length of you cannot attach the tripod securely and the tripod screw is less than 6 5 mm (9/32 inch) Otherwise you cannot attach the tripod securely and the screw may damage the camcorder

Cautions on the viewfinder and the LCD
- Do not pick up the camcorder by the viewfinder or by the LCD panel **[c]**
- Do not place the camcorder so as to point the viewfinder or the LCD screen toward the sun The inside of the viewfinder may be damaged Be careful when placing the camcorder under sunlight or by a window **[d]**

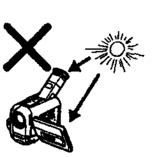
Располагайте видеокамеру на плоской поверхности или используйте треногу
Старайтесь распологать видеокамеру на столе или любои другои плоской поверхности на подходящей высоте Если Вы имеете треногу для фотоаппарата то Вы также можете использовать ее с видеокамерой
При прикреплении треноги не фирмы Sony убедитесь, что длина винта треноги менее 6,5 мм В противном случае Вы не сможете прикрепить треногу надежно и винт может повредить видеокамеру

Предостережения к видоискателю и ЖКД
- Не поднимайте видеокамеру за видоискатель или панель ЖКД [c]
- Не располагайте видеокамеру так чтобы видоискатель или экран ЖКД были направлены прямо на солнце Внутренние части видоискателя могут быть повреждены Будьте осторожны при расположение видеокамеры под солнцем или возле окна [d]

[c]



[d]

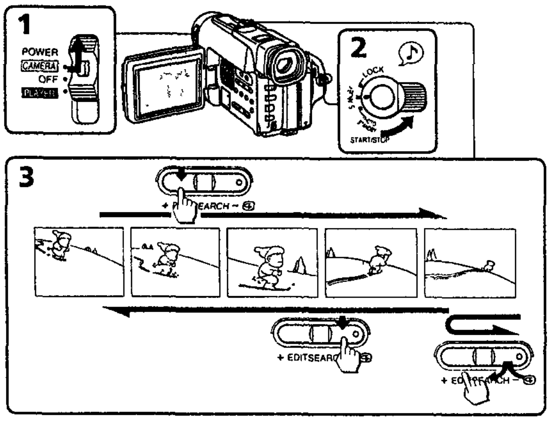


Checking the recorded picture

Проверка записанного изображения

Using EDITSEARCH, you can review the last recorded scene or check the recorded picture in the viewfinder or on the LCD screen
(1) While pressing the small green button on the POWER switch, set it to CAMERA
(2) Turn STANDBY up to STANDBY
(3) Press the – (⊖) side of EDITSEARCH momentarily, the last few seconds of the recorded portion play back **(Rec Review)**
You can monitor the sound from the speaker or headphone
Hold down the – side of EDITSEARCH until the camcorder goes back to the scene you want The last recorded portion is played back To go forward, hold down the + side **(Edit Search)**

Используя EDITSEARCH, Вы можете пересмотреть последнюю записанную сцену или проверить записанное изображение в видоискателе или на экране ЖКД
(1) Нажимая маленькую зеленую кнопку на выключателе POWER установите его в положение CAMERA
(2) Поверните STANDBY в положение STANDBY
(3) Ненадолго нажмите сторону – (⊖) кнопки EDITSEARCH, последние несколько секунд записанной части будут воспроизведены **(пересмотр записи)**
Вы можете контролировать звук через акустическую систему или головные телефоны
Держите сторону – кнопки EDITSEARCH до тех пор, пока видеокамера не вернется к желаемой сцене Последняя записанная часть будет воспроизведена Для продвижения вперед держите сторону + **(монтажный поиск)**



Checking the recorded picture

Проверка записанного изображения

To stop playback
Release EDITSEARCH

To go back to the last recorded point after edit search
Press END SEARCH The last recorded point is played back for about 5 seconds (10 seconds in LP mode) and stops Note that this function does not work once you eject the cassette after you recorded on the tape

To begin re-recording
Press START/STOP Re-recording begins from the point you released EDITSEARCH Provided you do not eject the cassette, the transition between the last scene you recorded and the next scene you record will be smooth

Для останова воспроизведения
Нажмите EDITSEARCH

Для возврата к последнему записанному месту после монтажного поиска
Нажмите END SEARCH Последнее записанное место будет воспроизводится в течение 5 секунд (10 секунд в режиме LP), а затем лента остановится Заметьте что данная функция не работает если Вы вытолкнете кассету после записи ленты ,

Для начала перезаписи
Нажмите START/STOP Перезапись начинается от точки где Вы отпустили EDITSEARCH Предусмотрено, чтобы Вы не вытолкнули кассету, и переход между последней сценой, которую Вы записали, и следующей сценой, которую Вы записываете, будет плавным

To display the date or time when you recorded

Press DATE or TIME on the camcorder To make the date or time disappear, press it again

To display the date and time when you recorded press TIME (or DATE) after pressing DATE (or TIME) To make the date and time disappear press DATE and TIME again

To display simultaneously the date and time when you recorded

Press DATA CODE on the Remote Commander To make the date and time disappear, press it again

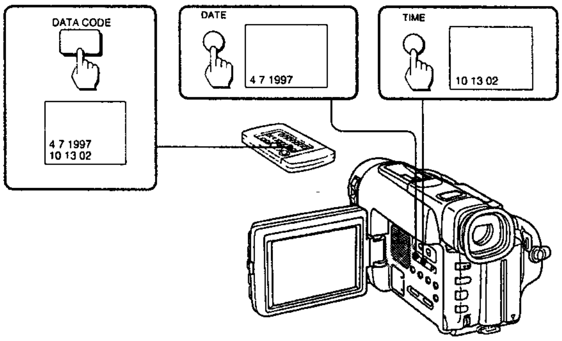
Для отображения даты при записи

Нажмите кнопку DATE или TIME на видеокамере Для того чтобы дата или время исчезли, нажмите кнопку еще раз

Для отображения даты и времени при записи нажмите кнопку TIME (или кнопку DATE) после нажатия кнопки DATE (или кнопку TIME) Для того, чтобы дата и время исчезли, нажмите кнопку DATE и кнопку TIME опять

Для одновременного отображения даты и времени при записи

Нажмите кнопку DATA CODE на пульте дистанционного управления Для того чтобы дата и время исчезли, нажмите кнопку опять



When bars (-- -- --) appear

- A blank portion of the tape is being played back
- The tape was recorded by a camcorder without the Data Code function
- The tape was recorded by a camcorder without having date and time set
- The tape is unreadable due to tape damage or noise
- The tape is being played back in variable speed (Slow Playback, etc)
- An index signal is marked, the RC time code is written, or PCM after recording is made on the tape

Если появляется шкала (-- -- --)

- Воспроизводится незаписанная часть ленты
- Лента была записана видеокамерой без применения функции кода данных
- Лента была записана видеокамерой без установки даты и времени
- Лента не может быть воспроизведена из за повреждения ленты или помех
- Лента воспроизводится с различной скоростью (замедленное воспроизведение и т д)
- Был отмечен индексный сигнал записан временной код RC или PCM после выполнения записи на ленте

Searching for the end of the picture

Поиск конца изображения

You can go to the end of the recorded portion after you record and play back the tape to make the transition between the last scene you recorded and the next scene smooth The tape starts rewinding or fast-forwarding and the last 5 seconds (10 seconds in LP mode) of the recorded portion play back Then the tape stops at the end of the recorded picture **(End Search)**

Note that the End Search function does not work once you eject the cassette after you have recorded on the tape

(1) While pressing OPEN, open the LCD panel

(2) Press END SEARCH

This function works when the POWER switch is set to either CAMERA or PLAYER

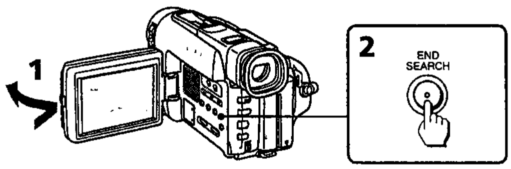
Вы можете перейти к концу записанной части после записи и воспроизведения ленты для выполнения плавного перехода между последней сценой которую Вы записали, и следующей сценой Лента начинает перематываться назад или вперед, и последние 5 секунд (10 секунд в режиме LP) записанной части будут воспроизведены Затем лента остановится в конце записанного изображения **(поиск конца)**

Обратите внимание, что функция поиска конца не работает если Вы вытолкнули кассету после выполнения записи на ленте

(1) Нажимая OPEN, откройте панель ЖКД

(2) Нажмите END SEARCH

Данная функция работает, когда выключатель POWER установлен в любое из положений, CAMERA или PLAYER



If you start recording after using END SEARCH

Occasionally, the transition between the last scene you recorded and the next scene may not be smooth

Если Вы начинаете запись после использования функции END SEARCH

Иногда переход между последней сценой, которую Вы записали, и следующей сценой может не быть плавным

Using alternative power sources

Использование альтерна-тивных источников питания

You can choose any of the following power sources for your camcorder battery pack the mains, alkaline battery, and 12/24 V car battery Choose the appropriate power source depending on where you want to use your camcorder

Place	Power source	Accessory to be used
Indoors	Mains	Supplied AC power adaptor
Outdoors	Battery pack	Battery pack NP F530 (supplied), NP-F730, NP-F930
	LR6 (size AA) Alkaline battery	Battery case (supplied)
In the car	12 V or 24 V car battery	Sony car battery charger DC-V515A

Note on power sources

Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape If this happens, restore the power supply again immediately

Using the mains

(1) Connect the mains lead to the mains

(2) Lift up the viewfinder

(3) Slide the connecting plate down into the guides at the rear of the camcorder until it clicks

Вы можете выбрать один из следующих источников питания для Вашей видеокамеры батарейный блок электрическую сеть, щелочные батарейки и автомобильный аккумулятор напряжением 12/24 В Выберите соответствующий источник питания в зависимости от того, где Вы хотите использовать Вашу видеокамеру

Место	Источник питания	Используемые принадлежности
В помещении	Электрическая сеть	Прилагаемый сетевой адаптер перем тока
На улице	Батарейный блок	Батарейный блок NP F530 (прилагается) NP F730 NP F930
	LR6 (размер AA) Щелочная батарейка	Батарейный футляр (прилагается)
В автомобиле	12 В или 24 В автомобильный аккумулятор	Зарядный выпрямитель автомобильного аккумулятора DC V515A фирмы Sony

Примечание к источникам питания

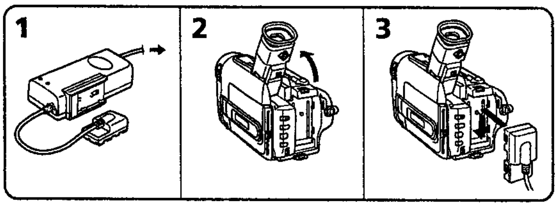
Отсоединение источника питания или снятие батарейного блока во время записи или воспроизведения может повредить вставленную ленту Если такое случится восстановите источник питания немедленно

Использование электрической сети

(1) Подсоедините сетевой провод к электрической сети

(2) Поднимите видоискатель вверх

(3) Сдвигайте соединительную пластину вниз в направляющем устройстве на задней стороне видеокамеры пока она не защелкнется



To remove the connecting plate

The connecting plate is removed in the same way as the battery pack

Для снятия соединительной пластины

Соединительная пластина снимается таким же способом как и батарейный блок

WARNING

The mains lead must only be changed at a qualified service shop

PRECAUTION

The set is not disconnected from the AC power source (mains) as long as it is connected to the mains, even if the set itself has been turned off

Notes on the VTR/CAMERA lamp

- The VTR/CAMERA lamp will remain lit for a while even if the unit is unplugged after use This is normal
- If the VTR/CAMERA lamp does not light, disconnect the mains lead After about one minute, reconnect the mains lead

Using the alkaline batteries

Use the battery case (supplied) and six LR6 (size AA) Sony Alkaline batteries (not supplied)

(1) Remove the battery holder from the battery case

(2) Insert six new alkaline batteries into the battery holder, following the marking on the holder to be sure the batteries are installed in the correct direction

(3) Insert the battery holder with the alkaline batteries

(4) Insert the battery case with the alkaline batteries to the battery mounting surface of the camcorder in the same way as the battery pack

ПРЕДУПРЖДЕНИЕ

Сетевой провод должен быть заменен только в мастерской квалифицированного обслуживания

ПРЕДОСТЕРЕЖЕНИЕ

Данный аппарат не отключается от источника питания перем тока (электрической сети) до тех пор, пока он подсодинен к электрической сети, даже, если сам аппарат выключен

Примечания к лампочке VTR/CAMERA

- Лампочка VTR/CAMERA останется горящей в течение некоторого времени, даже, если аппарат выключен после использования Это является нормальным
- Если лампочка VTR/CAMERA не горит, то отсоедините сетевой провод Приблизительно через одну минуту снова подсоедините сетевой провод

Использование щелочных батареек

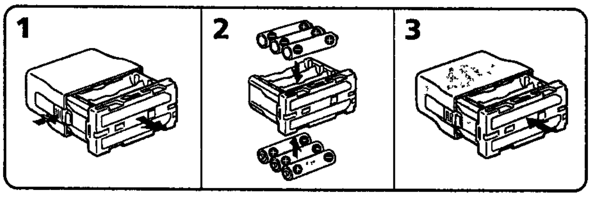
Используйте батарейный футляр (прилагается) и шесть щелочных батареек Sony LR6 (размера AA) (не прилагаются)

(1) Выньте кассету для батареек из батарейного футляра

(2) Вставьте шесть новых щелочных батареек в кассету, убедившись, что батарейки установлены в соответствии с полярностью

(3) Вставьте кассету с щелочными батарейками

(4) Вставьте батарейный футляр с щелочными батарейками вдоль установочной поверхности видеокамеры таким же способом, как и батарейный блок



Using alternative power sources

Использование альтернативных источников питания

Battery Life

Using alkaline batteries at 25°C (77°F).

Continuous recording time	Typical recording time
130 min.	80 min.

Notes

- You may not use the battery case in cold environment.
- The battery life may be shorter depending on the using environment.
- The above battery lives are estimates. The battery life may be shorter depending on the storage condition of the battery before being purchased and temperature.

To remove the battery case

The battery case is removed in the same way as the battery pack.

When you replace the batteries, be sure to remove the battery case from the camcorder to prevent malfunction

Using a car battery

Use Sony DC-V515A car battery charger (not supplied). Connect the car battery cord to the cigarette lighter socket of a car (12 V or 24 V). Connect the car battery cord to the camcorder in the same way as you connect the AC power adaptor.

To remove the car battery charger

The car battery charger is removed in the same way as the AC power adaptor.

This mark indicates that this product is a genuine accessory for Sony video products.

When purchasing Sony video products, Sony recommends that you purchase accessories with this "GENUINE VIDEO ACCESSORIES" mark.

Срок службы батареек

Используйте щелочные батарейки при температуре 25°С.

Непрерывное время записи	Типичное время записи
130 мин.	80 мин.

Примечания

- При низкой температуре Вы, возможно, не сможете использовать батарейный футляр.
- Срок службы батареек может быть короче в зависимости от окружающей среды.
- Указанные сроки службы батареек являются приблизительными. Срок службы батареек может быть короче в зависимости от условий хранения батареек до покупки и температуры.

Для снятия батарейного футляра

Батарейный футляр снимается таким же способом, как и батарейный блок.

Если Вы выймете батарейки, не забудьте вынуть батарейный футляр из видеокамеры, чтобы предотвратить возникновение неисправности.

Использование автомобильного аккумулятора

Использование зарядного выпрямителя автомобильного аккумулятора DC-V515A фирмы Sony. Подсоедините шнур автомобильного аккумулятора к гнезду сигаретного прикуривателя автомобиля (12 В или 24 В).

Подсоедините шнур автомобильного аккумулятора к видеокамере таким же образом, как и сетевой адаптер перем. тока.

Для снятия зарядного выпрямителя автомобильного аккумулятора

Зарядный выпрямитель автомобильного аккумулятора снимается таким же образом, как и сетевой адаптер перем. тока.

Настоящий знак указывает, что данная продукция является подлинной принадлежностью видеопродукции Sony.

Если Вы покупаете видеопродукцию Sony, то мы рекомендуем, чтобы Вы покупали принадлежности, помеченные знаком "GENUINE VIDEO ACCESSORIES".

Changing the mode settings

Изменение установок режимов

You can change the mode settings in the menu system to further enjoy the features and functions of the camcorder.

(1) Press MENU to display the menu.

(2) Turn the control dial to select the desired item, then press the dial.

(3) Turn the control dial to select the desired mode, and press the dial. If you want to change the other modes, repeat steps 2 and 3.

(4) Press MENU to erase the menu display.

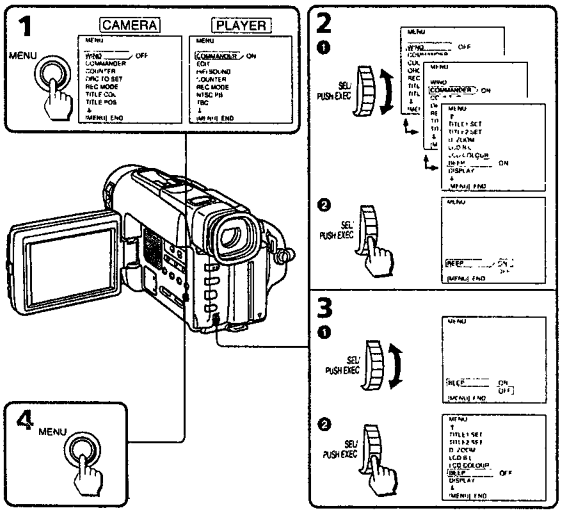
Вы можете изменять установки режимов в системе меню для большего наслаждения особенностями и функциями видеокамеры.

(1) Нажмиет MENU для отображения меню.

(2) Поверните регулировочный диск для выбора желаемой установки и нажмите диск.

(3) Поверните регулировочный диск для выбора желаемого режима и нажмите диск. Если Вы хотите изменить на другой режим, повторите пункты 2 и 3.

(4) Нажмите MENU для стирания отображения меню.



While recording in mirror mode

The menu does not appear on the LCD screen.

Во время записи в зеркальном режиме

Меню не появляется на экране ЖКД.

Selecting the mode setting of each item

Items for both CAMERA and PLAYER modes

COMMANDER <ON/OFF>

- Select ON when using the supplied Remote Commander for the camcorder
- Select OFF when not using the Remote Commander.

COUNTER* <NORMAL/TIME CODE>

- Normally select NORMAL.
- Select TIME CODE to display the RC time code in order to edit more precisely.

LCD B. L.* <BRT NORMAL/BRIGHT>

- Normally select BRT NORMAL
- Select BRIGHT when the LCD screen is dark.

When you select BRIGHT, battery life is about 10 percent shorter during recording

When you use the power sources other than the battery pack, BRIGHT is automatically selected, and LCD B. L is not displayed in the menu.

LCD COLOUR*

Select this item to adjust the colour on the LCD screen.

BEEP* <ON/OFF>

- Select ON so that beeps sound when you start/stop recording, etc.
- Select OFF when you do not want to hear the beep sound.

DISPLAY*

- Normally select LCD. The display appears on the LCD screen.
- Select V-OUT/LCD to show the display both on the TV screen and LCD screen.

VF PW-SAVE* <ON/OFF>

- Select ON to turn off the viewfinder when you move your face away from it, saving battery power.
- Select OFF to have the viewfinder always turn on.

Выбор режима каждой установки

Установки для режимов и CAMERA и PLAYER

COMMANDER <ON/OFF>

- Выберите ON при использовании прилагаемого к видеокамере пульта дистанционного управления.
- Выберите OFF, если пульт дистанционного управления не используется

COUNTER* <NORMAL/TIME CODE>

- Обычно выбирайте NORMAL.
- Выберите TIME CODE для отображения временного кода RC для более точного монтажа.

LCD B.L.* <BRT NORMAL/BRIGHT>

- Обычно следует выбирать BRT NORMAL.
- Выберите положение BRIGHT, если экран ЖКД является темным.

Если Вы выберете положение BRIGHT, срок службы батарейного блока будет примерно на 10 процентов короче при записи

Если Вы используете другие источники питания, кроме батарейного блока, автоматически выберется положение BRIGHT и индикация LCD B.L. не будет отображаться в меню.

LCD COLOUR*

Выберите данную установку для регулировки цвета на экране ЖКД.

BEEP* <ON/OFF>

- Выберите ON, чтобы зуммерные сигналы звучали, когда Вы начинаете/останавливаете запись и т.д.
- Выберите OFF, если Вы не хотите слышать зуммерный звуковой сигнал.

DISPLAY*

- Обычно следует выбирать LCD. На экране ЖКД появится индикация.
- Выберите V-OUT/LCD для того, чтобы индикация отражалась как на телевизионном экране, так и на экране ЖКД.

VF PW-SAVE* <ON/OFF>

- Выберите ON для выключения видоискателя при удалении от него Вашего лица для экономии заряда батарей.
- Выберите OFF, чтобы видоискатель был всегда включен.

Items for CAMERA mode only

WIND <ON/OFF>

- Select ON to reduce wind noise when recording in strong wind.
- Normally select OFF.

ORC TO SET*

Select this item to automatically adjust the recording condition to get the best possible recording.

If you have already performed this function, "ORC ON" is displayed.

REC MODE* <SP/LP>

- Select SP when recording in SP (standard play) mode.
- Select LP when recording in LP (long play) mode.

TITLE COL* <WHITE/YELLOW/VIOLET/RED/CYAN/GREEN/BLUE>

Select the colour of the title.

TITLE POS* <CENTER/BOTTOM>

- Select CENTER to centre the title in the picture.
- Select BOTTOM to position the title at the bottom of the picture.

TITLE LANG* <ENGLISH/ FRANÇAIS/ ESPAÑOL/ PORTUGUÊS/ DEUTSCH/ NEDERLANDS/ ITALIANO>

Select the language of the preset titles.

TITLE1 SET*/TITLE2 SET*

Store your own titles.

D ZOOM* <ON/OFF>

- Select ON to activate digital zooming.
- Select OFF to not use the digital zoom. The camcorder goes back to 15x zoom.

Установки только для режима CAMERA

WIND <ON/OFF>

- Выберите ON для понижения шума ветра при записи на сильном ветру.
- В нормальных условиях выбирайте OFF.

ORC TO SET*

Выберите данную установку для автоматической регулировки условий записи для получения по возможности наилучшей записи.

Если Вы уже задействовали эту функцию, то будет отображаться "ORC ON".

REC MODE* <SP/LP>

- Выберите SP для записи или воспроизведения в режиме SP (стандартного воспроизведения).
- Выберите LP для записи или воспроизведения в режиме LP (удлиненного воспроизведения).

TITLE COL* <WHITE/YELLOW/VIOLET/RED/CYAN/GREEN/BLUE>

Выберите цвет надписи.

TITLE POS* <CENTER/BOTTOM>

- Выберите CENTER для расположения надписи в центре изображения.
- Выберите BOTTOM для расположения надписи внизу изображения.

TITLE LANG* <ENGLISH/FRANÇAIS/ESPAÑOL/PORTUGUÊS/DEUTSCH/NEDERLANDS/ITALIANO>

Выберите язык предварительно устанавливаемых надписей.

TITLE 1 SET*/TITLE 2 SET*

Запоминание Ваших собственных надписей.

D ZOOM* <ON/OFF>

- Выберите ON для активизации цифровой трансфокации.
- Выберите OFF для отключения цифровой трансфокации. Видеокамера возвратится к трансфокации 15x.

REC LAMP* <ON/OFF>
- Select OFF when you do not want the camera recording/battery lamp at the front of the unit to light up
- Normally select ON

CLOCK SET*
Reset the date or time

DEMO MODE* <ON/OFF>
- Select ON to make the demonstration appear
- Select OFF to deactivate the demonstration mode

Notes on DEMO MODE
- DEMO MODE is set to STBY (Standby) at the factory and the demonstration starts about 10 minutes after you set the POWER switch to CAMERA without inserting a cassette
  Note that you cannot select STBY of DEMO MODE in the menu system
- You cannot select DEMO MODE when a cassette is inserted in the camcorder
- If you insert a cassette during the demonstration, the demonstration stops You can start recording as usual DEMO MODE automatically returns to STBY

To look at the demonstration at once
Eject the cassette, if inserted Select ON of DEMO MODE and erase the menu display The demonstration will begin
When you turn off the camcorder once, DEMO MODE automatically returns to STBY

REC LAMP* <ON/OFF>
- Выберите OFF если Вы не хотите, чтобы загоралась лампочка записи камерой/батареи, расположенная на передней стороне аппарата
- Обычно выбирайте ON

CLOCK SET*
Повторная установка даты или времени

DEMO MODE* <ON/OFF>
- Выберите ON, чтобы появилась демонстрация
- Выберите OFF, чтобы выключить режим демонстрации

Примечания по режиму DEMO MODE
- На заводе-изготовителе режим DEMO MODE установлен в положение STBY (режим готовности), и демонстрация начнется примерно через 10 минут после того, как Вы установите переключатель POWER в положение CAMERA без установки кассеты Имейте в виду, что Вы не сможете выбрать STBY режима DEMO MODE в системе меню
- Вы не сможете выбрать режим DEMO MODE, если кассета вставлена в видеокамеру
- Если Вы вставите кассету во время демонстрации, то демонстрация прекратится Вы можете начать запись как обычно Режим DEMO MODE автоматически вернется в состояние STBY

Для того, чтобы сразу взглянуть на демонстрацию
Извлеките кассету если она вставлена Выберите ON режима DEMO MODE и удалите индикацию меню Начнется демонстрация
Если Вы выключите один раз видеокамеру, режим DEMO MODE автоматически вернется в положение STBY

Items for PLAYER mode only

EDIT <ON/OFF>
- Select ON to minimize picture deterioration when editing
- Normally select OFF

HiFi SOUND <STEREO/1/2>
- Normally select STEREO
- Select 1 or 2 to play back a dual sound track tape

NTSC PB* <ON PAL TV/NTSC 4 43>
- Normally select ON PAL TV
- Select NTSC 4 43 when playing back a tape recorded in the NTSC colour system
  When you play back on a Multi System TV, select the best mode while watching the picture on the TV

TBC* <ON/OFF>
- Normally select ON, to correct for jitter
- Select OFF to not correct for jitter The picture may not be steady when played back

Note on TBC setting
Set TBC to OFF when
- Playing back a tape you have dubbed over
- Playing back a tape on which you recorded the signal of a TV game or similar machine
- The playback picture fluctuates

DNR* <ON/OFF>
- Normally select ON to reduce picture noise
- Select OFF if the picture has a lot of movement, causing a conspicuous afterimage

The following settings work only during playback
FDIT, HiFi SOUND, TBC, and DNR

* These settings are retained even when the battery is removed, as long as the lithium battery is in place

Установки только для режима PLAYER

EDIT <ON/OFF>
- Выберите ON для сведения к минимуму ухудшение качества при монтаже
- Обычно выбираите OFF

HiFi SOUND <STEREO/1/2>
- Обычно выбираите STEREO
- Выберите 1 или 2 для воспроизведения ленты с двойнои звуковои дорожкой

NTSC PB* <ON PAL TV/NTSC 4 43>
- Обчно выбирайте ON PAL TV
- Выберите NTSC 4 43 при воспроизведении ленты, записанной в системе цветного телевидения NTSC
  Когда Вы воспроизводите на мультисистемном телевизоре, выберите наилучший режим при просмотре изображения на телевизоре

TBC* <ON/OFF>
- Обычно выбирайте ON для коррекции дрожания
- Выберите OFF чтобы не корректировать дрожание Изображение может быть неустоичивым при воспроизведении

Примечание относительно установки TBC
Установите TBC в положение OFF в следующих случаях
- Воспроизведение ленты, на которои выполнена перезапись
- Воспроизведение ленты, на которую Вы записали сигнал телевизионной игры или подобного аппарата
- Воспроизводимое изображение подрагивает

DNR* <ON/OFF>
- Обычно выбирайте ON для снижения помех на изображении
- Если изображение содержит множество движений, вызывая заметные послеизображения то выберите OFF

Следующие установки работают только во время воспроизведения
EDIT HiFi SOUND, TBC и DNR

* Данные установки сохраняются, даже когда снимается батарейный блок до тех пор пока установлена литиевая батарейка

Fade-in and fade-out

You can fade in or out to give your recording a professional appearance
When fading in the picture gradually fades in from black or mosaic while the sound increases
When fading out, the picture gradually fades to black or mosaic while the sound decreases

When fading in [a]

(1) While the camcorder is in Standby mode, press FADER until the FADER or M (mosaic) FADER indicator flashes
(2) Press START/STOP to start recording The fade indicator stops flashing

When fading out [b]

(1) During recording, press FADER until the FADER or M (mosaic) FADER indicator flashes
(2) Press START/STOP to stop recording The fade indicator stops flashing, and then recording stops

Введение и выведение изображения

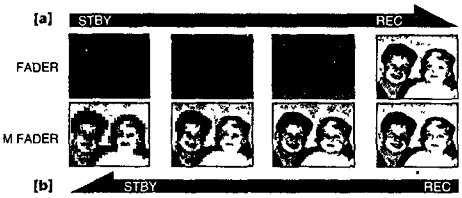
Вы можете вводить и выводить изображение, придавая Ва шеи записи профессиональный вид
При введении изображение постепенно вводится от черного или мозаического с одновременным повышением звука При выведении изображение постепенно выводится до черного или мозаического с одновременным понижением звука

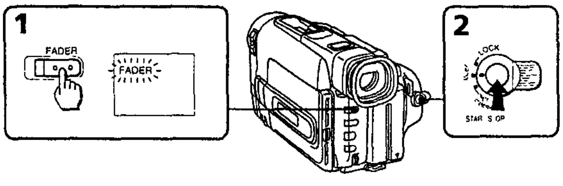
Для введения изображения [a]

(1) В то время, когда видеокамера находится в режиме готовности, нажимайте кнопку FADER, пока не начнет мигать индикатор FADER или индикатор M (мозаика) FADER
(2) Нажмите START/STOP для начала записи Индикатор введения перестает мигать

Для выведения изображения [b]

(1) Во время записи нажимайте кнопку FADER до тех пор, пока не начнет мигать индикатор FADER или индикатор M (мозаика) FADER
(2) Нажмите START/STOP для останова записи Индикатор введения перестает мигать и запись останавливается





To cancel the fade-in/fade-out function
Before pressing START/STOP, press FADER until the fade indicator disappears

Для отмены функции введения/выведения изображения
Перед нажатием START/STOP нажимайте FADER до тех пор, пока индикатор введения не исчезнет

When the date or time indicator is displayed
The date or time indicator does not fade in or fade out

When the START/STOP MODE switch is set to 5SEC or ⊥
You cannot use the fader function

Notes on the fader function
You cannot use the following functions while using the fader function Also, while using the following functions you cannot use the fader function
- Functions using the DIGITAL EFFECT button
- Title

Если отображается индикатор даты или времени
Индикатор даты или времени плавно не вводится и не выводится

Если переключатель START/STOP MODE установлен в положение 5SEC или ⊥
Вы не сможете использовать функцию введения/выведения изображения

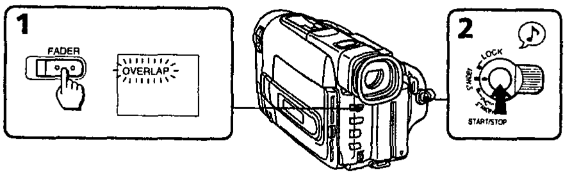
Примечания относительно функции введения/выведения изображения
Во время использования функции введения/выведения изображения Вы не сможете использовать следующих функций А также во время использования следующих функций Вы не сможете использовать функцию введения/выведения изображения
- Функции, при которых используется кнопка DIGITAL EFFECT
- Надпись

Overlapping two pictures

When using the overlap function, the picture gradually fades in over a still picture of the last scene recorded
(1) While the camcorder is in Standby mode, press FADER repeatedly until the OVERLAP indicator flashes
The still picture is mixed in the moving picture with halftone
(2) Press START/STOP to start recording
The scene being shot gradually fades in over the still picture of the last recorded scene The sound of the scene being shot is gradually heard
The OVERLAP indicator disappears after the overlap function is completed

Наложение двух изображений

При использовании функции наложения изображение постепенно вводится из неподвижного изображения последнего записанного эпизода
(1) В то время, когда видеокамера находится в режиме готовности, нажимайте повторно кнопку FADER, пока не начнет мигать индикатор OVERLAP
Неподвижное изображение смешивается с подвижным изображением с помощью полутонов
(2) Нажмите кнопку START/STOP для начала записи Сцена, съемка которой производится, постепенно вводится из неподвижного изображения последнего записанного эпизода Звук записываемой сцены постепенно нарастает
Индикатор OVERLAP исчезает после выключения функции наложения



Overlapping two pictures

Наложение двух изображений

To cancel the overlap function
Before pressing START/STOP press FADER until the indicator disappears

When the START/STOP MODE switch is set to 5SEC or ⊥
You cannot use the overlap function

Notes on the overlap function
- You cannot use the following functions while using the overlap function Also while using the following function, you cannot use the overlap function
  - – Functions using the DIGITAL EFFECT button
  - – Low Lux mode of PROGRAM AE
  - – Title
- If you do not record anything before operating the overlap function, the camcorder memorizes the image on the tape As the image is being memorized, the OVERLAP indicator flashes quickly, and the picture you are shooting disappears from the viewfinder Depending on the tape condition, the picture may not be recorded clearly

Наложение двух изображений
Для отмены функции наложения
Перед тем, как нажать переключатель START/STOP, нажимайте кнопку FADER, пока индикатор не исчезнет

Если переключатель START/STOP MODE установлен в положение 5SEC или ⊥
Вы не сможете использовать функцию наложения

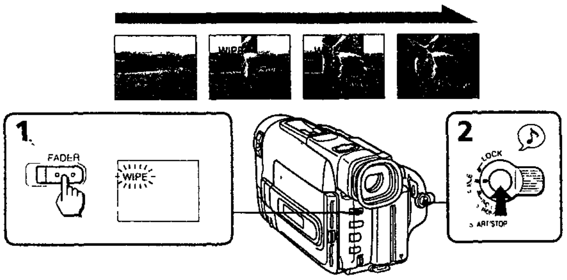
Примечания относительно функции наложения
- Во время использования функции наложения Вы не сможете задействовать следующих функций Также при использовании следующих функций Вы не сможете задействовать функцию наложения
  - – Функции при которых используется кнопка DIGITAL EFFECT
  - – Режим низкой освещенности из серии PROGRAM AE
  - – Надпись
- Если Вы ничего не записывали перед использованием функции наложения видеокамера сохранит в памяти изображение на ленте В то время как изображение будет заноситься в память индикатор OVERLAP будет быстро мигать и изображение съемку которого Вы производите, исчезнет с экрана видоискателя В зависимости от состояния ленты изображение не всегда может быть четко записано

Wiping away a still picture

Вытеснение шторкой неподвижного изображения

When using the wipe function, the picture gradually wipes away the still picture of the last scene recorded
(1) While the camcorder is in Standby mode, press FADER repeatedly until the WIPE indicator flashes
(2) Press START/STOP to start recording
The scene being shot gradually wipes away the last recorded scene from the centre outward The sound of the scene being shot is gradually heard
The WIPE indicator disappears after the wipe function is completed

При использовании функции вытеснения шторкой изображение постепенно вытесняет неподвижное изображение последнего записанного эпизода
(1) В то время когда видеокамера находится в режиме готовности нажимайте повторно кнопку FADER, пока не начнет мигать индикатор WIPE
(2) Нажмите кнопку START/STOP для начала записи
Сцена, съемка которой производится, постепенно вытесняет последний запаисанный эпизод от цетра к периферии Звук записываемой сцены постепенно нарастает
После завершения действия функции вытеснения шторкой индикатор WIPE исчезнет



To cancel the wipe function
Before pressing START/STOP, press FADER so that the indicator disappears

When the START/STOP MODE switch is set to 5SEC or ⊥
You cannot use the wipe function

Для отмены функции вытеснения шторкой
Перед тем, как нажать кнопку START/STOP нажмите кнопку FADER

Если переключатель START/STOP MODE установлен в положение 5SEC или ⊥
Вы не сможете использовать функцию вытеснения шторкой

Wiping away a still picture

Вытеснение шторкой неподвижного изображения

Notes on the wipe function
- You cannot use the following functions while using the wipe function Also while using the following function, you cannot use the wipe function
  - – Functions using the DIGITAL EFFECT button
  - – Low Lux mode of PROGRAM AE
  - – Title
- If you do not record anything before operating the wipe function, the camcorder memorizes the image on the tape As the image is being memorized, the WIPE indicator flashes quickly, and the picture you are shooting disappears from the viewfinder Depending on the tape condition, the picture may not be recorded clearly

Примечания относительно функции вытеснения шторкой
- Во время использования функции вытеснения шторкои Вы не сможете задействовать следующих функции Также при использовании следующих функций Вы не сможете задействовать функцию вытеснения шторкои
  - – Функции при которых используется кнопка DIGITAL EFFECT
  - – Режим низкой освещенности из серии PROGRAM AE
  - – Надпись
- Если Вы ничего не записывали перед использованием функции вытеснения шторкой видеокамера сохранит в памяти изображение на ленте В то время, как изображение будет заноситься в память, индикатор WIPE будет быстро мигать, и изображение съемку которого Вы производите, исчезнет с экрана видоискателя В зависимости от состояния ленты изображение не всегда может быть четко записано

Using the wide mode function

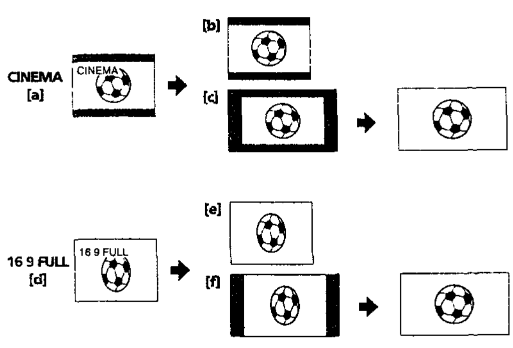
Использование функции широкоформатного режима

Selecting the desired mode

You can record a cinemalike picture (CINEMA) or a 16 9 wide picture to watch on the 16 9 wide-screen TV (16 9 FULL)

Выбор желаемого режима

Вы можете записывать изображение как в кинотеатре (CINEMA) или широкоформатное изображение 16 9 для просмотра на широкоэкранном телевизоре 16 9 (16 9 FULL)



CINEMA
Black bands appear at the top and the bottom of the screen and the viewfinder or LCD screen [a] and a normal TV screen [b] look wide You can also watch the picture without black bands on a wide-screen TV [c]

16 9 FULL
The picture in the viewfinder or LCD screen [d] or on a normal TV [e] is horizontally compressed You can watch the picture of normal images on a wide-screen TV [f]

CINEMA
Черные полосы появляются сверх и снизу экрана и в видоискателе или на экране ЖКД [a] и обычный телевизионный экран [b] выглядит как широкии Вы также можете смотреть изображение без черных полос на широкоэкранном телевизоре [c]

16 9 FULL
Изображение в видоискателе или на экране ЖКД [d] или на нормальном телевизоре [e] будет сжато по горизонтали Вы можете смотреть нормальное изображение на широкоэкранном телевизоре [f]

Using the wide mode function

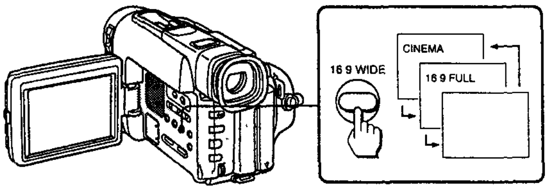
Использование функции широкоформатного режима

Using the wide mode function

While the camcorder is in Standby mode, press 16 9 WIDE repeatedly so that the desired mode indicator appears in the viewfinder or on the LCD screen

Использование функции широкоформатного режима

Когда видеокамера находится в режиме готовности повторно нажимайте 16 9 WIDE до тех пор, пока индикатор желаемого режима не появится в видоискателе или на экране ЖКД



To cancel wide mode

Press 16 9 WIDE repeatedly until the wide mode indicator disappears

To watch the tape recorded in wide mode

To watch the tape recorded in CINEMA mode, set the screen mode of the wide-screen TV to zoom mode To watch the tape recorded in 16 9 FULL mode, set it to full mode For details, refer to the instruction manual of your TV

Note that the picture recorded in 16 9 FULL mode looks compressed on a normal TV

Notes on wide mode

- If wide mode is set to 16 9 FULL the Steady Shot function does not work and the «◯» indicator flashes
- In wide mode, you cannot select the old movie function with DIGITAL EFFECT
- When you record in 16 9 FULL mode, the date or time indicator will be widened on the wide-screen TV
- If you dub a tape, the tape is copied in the same mode as the original recording
- The wide mode is canceled automatically 5 minutes after you remove the power source
- When recording, you cannot change the mode

Для отмены широкоформатного режима

Повторно нажимайте 16 9 WIDE до тех пор, пока индикатор широкоформатного режима не исчезнет

Для просмотра ленты, записанной в широкоформатном режиме

Для просмотра ленты, записанной в режиме CINEMA, установите режим экрана широкоэкранного телевизора на режим масштабирования Для просмотра ленты, записанной в режиме 16 9 FULL, установите его на полноэкранный режим Подробности смотрите в руководстве по эксплуатации Вашего телевизора

Заметьте, что изображение, записанное в режиме 16 9 FULL, выглядит сжатым на обычном телевизоре

Примечания к широкоформатному режиму

- Если широкоформатный режим установлен на 16 9 FULL, функция устойчивой съемки не будет работать и индикатор («◯») будет мигать
- В широкоэкранном режиме Вы не сможете выбрать функцию старинного кино с помощью кнопки DIGITAL EFFECT
- При записи в режиме 16 9 FULL индикатор даты или времени будет расширенным на широкоэкранном телевизоре
- Если Вы осуществляете перезапись ленты, то лента будет перезаписана в таком же режиме, как и исходная запись
- Широкоформатный режим будет автоматичкески отменен через 5 минут после снятия источника питания
- В процессе записи Вы не сможете изменить режим

Photo recording

Фотосъемка

You can record a still picture like a photograph for about seven seconds This mode is useful when you want to enjoy a picture such as you would a photograph or when you print a picture using a video printer (not supplied)

We recommend you to use the HVL-FDH video flash light (not supplied) when shooting in the dark Attach the video flash light to the accessory shoe When ϟ appears, the video flash light is ready for flashing

(1) Turn STANDBY up to PHOTO STANDBY

(2) Keep pressing START/STOP lightly until a still picture appears
PHOTO MEMORY appears
To change the still picture, release START/STOP, select a still picture again and then press and hold START/STOP lightly

(3) Press START/STOP deeper

The still picture in the viewfinder is recorded for about seven seconds The sound during those seven seconds is also recorded

Вы можете записывать неподвижное изображение подобно фотоснимку примерно семь секунд Этот режим полезен, если Вы хотите наслаждаться изображением в виде фотографии или же когда Вы хотите отпечатать фотоснимок, используя видеопринтер (не прилагается)

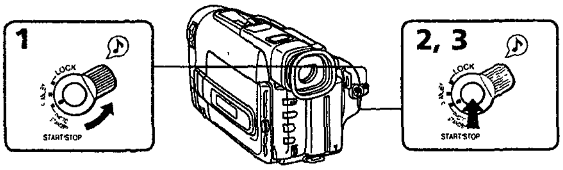
Мы рекомендуем Вам использовать видеовспышку HVL FDH (не прилагается) при съемке в темноте Прикрепите видеовспышку к держателю для принадлежностей Если появится индикация ϟ видеовспышка готова к работе

(1) Поверните регулятор STANDBY в положение PHOTO STANDBY

(2) Держите слегка нажатой кнопку START/STOP до тех пор пока не появится неподвижное изображение
Появится индикация PHOTO MEMORY
Для изменения неподвижного изображения отпустите кнопку START/STOP выберите неподвижное изображение опять, а затем слегка нажмите и держите нажатой кнопку START/STOP

(3) Нажмите кнопку START/STOP сильнее

Неподвижное изображение в видоискателе будет записываться около семи секунд Звук в течение тех семи секунд также будет записываться



Notes on photo recording

- During photo recording, you cannot use the DIGITAL EFFECT button and FADER button
- If you turn STANDBY up to PHOTO STANDBY while using the DIGITAL EFFECT function the operation being executed is cancelled
- When recording a still picture, do not shake the camcorder The picture may fluctuate
- The shutter speed is automatically adjusted up to 1/1000 second depending on the environment
- When ϟ flashes, the appropriate brightness may not be obtained

Примечания по фотосъемке

- Во время фотосъемки Вы не сможете использовать кнопку DIGITAL EFFECT и кнопку FADER
- Если Вы повернете регулятор в положение STANDBY в положение PHOTO STANDBY во время использования функции DIGITAL EFFECT выполняемая операция будет отменена
- Во время записи неподвижного изображения не трясите видеокамеру Изображение может дрожать
- Скорость затвора регулируется автоматически вплоть до 1/1000 секунды в зависимости от окружающей среды
- Если мигает ϟ, соответствующая яркость может быть не получена

Enjoying picture effect

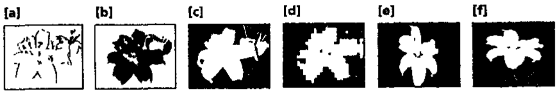
Наслаждение эффектами изображения

Selecting picture effect

You can make pictures like those of television with the Picture Effect function

Выбор эффекта изображения

Вы можете сделать изображение в стиле тех, что передают по телевидению с помощью функции эффектов изображения



PASTEL [a]
The contrast of the picture is emphasized and the picture looks like an animated cartoon

NEG ART [b]
The colour and brightness of the picture is reversed

SEPIA
The picture is sepia

B&W
The picture is monochrome (black and white)

SOLARIZE [c]
The light intensity is more clear, and the picture looks like an illustration

MOSAIC [d]
The picture is mosaic

SLIM [e]
The picture expands vertically

STRETCH [f]
The picture expands horizontally

PASTEL [a]
Контраст изображения усиливается, и изображение будет выглядеть как мультипликационный фильм

NEG ART [b]
Цвет и яркость изображения будет негативным

SEPIA
Изображение будет в цвете сепия

B&W
Изображение будет монохроматическим (черно-белым)

SOLARIZE [c]
Яркость света будет более ясной, и изображение будет выглядеть как рисунок

MOSAIC [d]
Изображение будет мозаическим

SLIM [e]
Изображение расширяется по вертикали

STRETCH [f]
Изображение расширяется по горизонтали

Enjoying picture effect

Наслаждение эффектами изображения

Using picture effect function

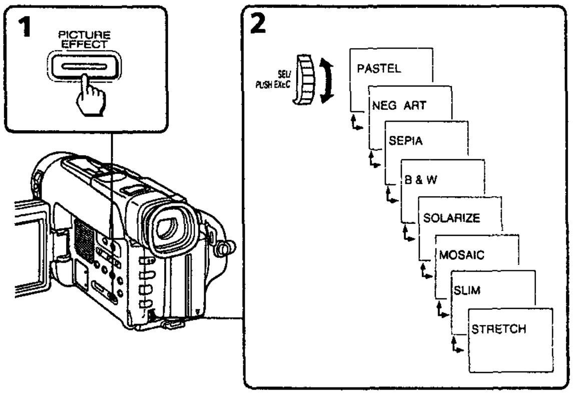
(1) Press PICTURE EFFECT

(2) Turn the control dial to select the desired picture effect mode

Использование функции эффектов изображения

(1) Нажмите PICTURE EFFECT

(2) Поверните ругулировочный диск для выбора желаемого режима эффекта изображения



To turn off picture effect

Press PICTURE EFFECT The indicator in the viewfinder or on the LCD screen goes out

Notes on the picture effect

- When you turn the power off, the camcorder returns automatically to normal mode
- While using the picture effect function, you cannot select the old movie function with DIGITAL EFFECT

Для выключения эффекта изображения

Нажмите PICTURE EFFECT Индикатор в видоискателе или на экране ЖКД погаснет

Примечания относительно эффектов изображения

- Если Вы выключите питание, видеокамера автоматически вернется к нормальному режиму
- Во время использования функции эффектов изображения Вы не сможете выбрать функцию старинного кино с помощью кнопки DIGITAL EFFECT

Superimposing a still picture on a moving picture

Using the still function you can record a still picture to be superimposed on a moving picture The sound is recorded normally

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the STILL indicator flashes

(2) Press the control dial
The STILL indicator lights up and the still bars appear The still picture is stored in memory

(3) Turn the control dial to adjust the rate of the still picture you want to superimpose on the moving picture The rate of the still picture increases with the number of the still bars

(4) Press START/STOP to start recording a moving picture with a still picture superimposed on it When you stop recording, press START/STOP again

Наложение неподвижного изображения на подвижное изображение

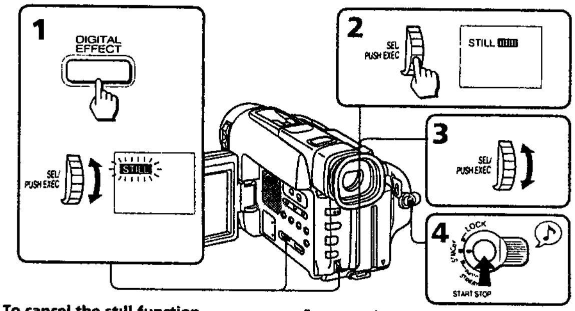
Используя функцию неподвижного изображения, Вы можете записать неподвижное изображение с наложением на подвижное изображение Звук при этом записывается нормально

(1) В то время, когда видеокамера находится в режиме готовности или режиме записи нажимайте кнопку DIGITAL EFFECT и поворачивайте диск управления, пока не начнет мигать индикатор STILL

(2) Нажмите диск управления
Высветится индикатор STILL и появятся неподвижные полосы Неподвижное изображение будет сохранено в памяти

(3) Поверните диск управления чтобы отрегулировать размер неподвижного изображения которое будет наложено на подвижное изображение Размер неподвижного изображения увеличивается пропорционально количеству неподвижных полос

(4) Нажмите кнопку START/STOP для начала записи подвижного изображения с наложенным на него неподвижным изображением Для остановки записи нажмите кнопку START/STOP опять



To cancel the still function

Press DIGITAL EFFECT

Notes on the still function

- You cannot use the following functions while recording a still picture
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
- When you set the POWER switch to OFF, the still function will be cancelled automatically

Для отмены функции неподвижного изображения

Нажмите кнопку DIGITAL EFFECT

Примечания относительно функции неподвижного изображения

- Во время записи неподвижного изображения Вы не сможете использовать следующих функций
  - Функции при которых используется кнопка FADER
  - Режим низкой освещенности из серии PROGRAM AE
- Если Вы установите переключатель POWER в положение OFF функция неподвижного изображения будет отменена автоматически

Recording still pictures successively

Using the flash motion function, you can record still pictures successively at constant intervals The sound is recorded normally

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the FLASH indicator flashes

(2) Press the control dial
The FLASH indicator lights up and the flash motion bars appear The still picture is stored in memory

(3) Turn the control dial to adjust the interval of flash motion The intervals increase with the number of the flash motion bars

(4) Press START/STOP Flash motion recording starts When you stop recording, press START/STOP again

[a] normal recording
[b] flash motion recording

Запись последовательности неподвижных изображений

Используя функцию мелькающего движения Вы можете записывать неподвижные изображения последовательно с постоянными интервалами Звук при этом записывается нормально

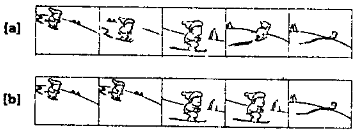
(1) В то время, когда видеокамера находится в режиме готовности или в режиме записи, нажмите кнопку DIGITAL EFFECT и поворачивайте диск управления до тех пор, пока не начнет мигать индикатор FLASH

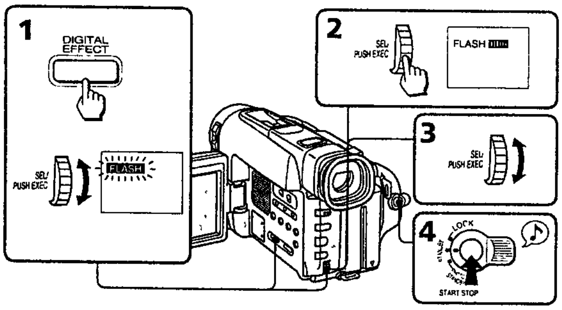
(2) Нажмите диск управления
Высветится индикатор FLASH и появятся полосы мелькающего движения
Неподвижное изображение будет сохранено в памяти

(3) Поверните диск управления, чтобы отрегулировать интервал мелькающего движения Интервал возрастает пропорционально количеству полос мелькающего движения

(4) Нажмите кнопку START/STOP Начнется запись мелькающего движения Если Вы остановите запись, нажмите опять кнопку START/STOP

[а] нормальная запись
[b] запись мелькающего движения





Recording still pictures successively

Запись последовательности неподвижных изображений

To cancel the flash motion function

Press DIGITAL EFFECT

Notes on the flash motion function

- You cannot use the following functions during the flash motion recording
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
- When you set the POWER switch to OFF, the flash motion function will be cancelled automatically

Для отмены мелькающего движения

Нажмите кнопку DIGITAL EFFECT

Примечания относительно функции мелькающего движения

- Во время записи мелькающего изображения Вы не сможете использовать следующих функций
  - Функции, при которых используется кнопка FADER
  - Режим низкой освещенности из серии PROGRAM AE
- Если Вы установите переключатель POWER в положение OFF функция мелькающего изображения будет отменена автоматически

Replacing a brighter portion of a still picture with a moving picture

Using the luminancekey function, you can replace a brighter portion of a still picture with a moving picture
For example, you can superimpose the favorite scene on the background if you store the picture in memory as a still picture, such as a person in a bright background The sound is recorded normally

Замена светлой части неподвижного изображения на подвижное изображение

Используя функцию яркостного манипулятора, Вы можете заменить светлую часть неподвижного изображения на подвижное изображение
Например, Вы можете наложить любимую сцену на задний фон, если Вы сохраните изображение в памяти как неподвижное изображение, например, человек на ярком заднем фоне Звук будет записываться нормально

Replacing a brighter portion of a still picture with a moving picture

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the LUMI indicator flashes

(2) Press the control dial
The LUMI indicator lights up and the luminancekey bars appear The still picture is stored in memory

(3) Turn the control dial to adjust the colour scheme of the still picture The rate of the still picture increases by the number of the luminancekey bars

(4) Press START/STOP Luminancekey recording starts When you stop recording, press START/STOP again

[a] still picture
[b] moving picture

Замена светлой части неподвижного изображения на подвижное изображение

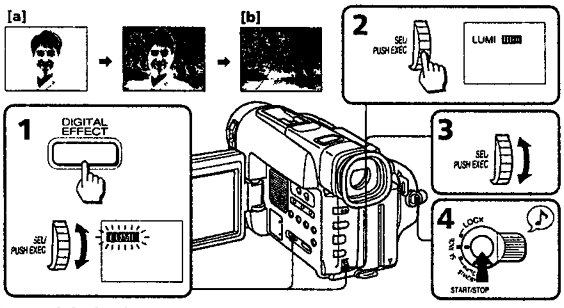
(1) В то время,когда видеокамера находится в режиме готовности или в режиме записи, нажмите кнопку DIGITAL EFFECT и поворачивайте диск управления до тех пор, пока не начнет мигать индикаторLUMI

(2) Нажмите диск управления
Высветится индикатор LUMI и появятся полосы яркостного манипулятора
Неподвижное изображение будет сохранено в памяти

(3) Поверните диск управления чтобы отрегулировать цветовую гамму неподвижного изображения Размер неподвижного изображения увеличивается пропорционально количеству полос яркостного манипулятора

(4) Нажмите кнопку START/STOP Начнется запись яркостного манипулятора Для остановки записи нажмите кнопку START/STOP опять

[а] неподвижное изображение
[b] подвижное изображение



To cancel the luminancekey function

Press DIGITAL EFFECT

Notes on the luminancekey function

- The following functions do not work during luminancekey mode
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
- When you set the POWER switch to OFF, the luminancekey function will be cancelled automatically

Для отмены функции яркостного манипулятора

Нажмите кнопку DIGITAL EFFECT

Примечания относительно функции яркостного манипулятора

- В режиме яркостного манипулятора следующие функции не работают
  - Функции при которых используется кнопка FADER
  - Режим низкой освещенности из серии PROGRAM AE
- Если Вы установите переключатель POWER в положение OFF, функция яркостного манипулятора будет отменена автоматически

Adding an incidental image to pictures

Присоединение побочного изображения к основному

Using the trail function, you can record the picture which leaves an incidental image, such as a trail The sound is recorded normally You can adjust the vanishing time of the incidental image with the control dial

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the TRAIL indicator flashes

(2) Press the control dial
The TRAIL indicator lights up and the trail bars appear

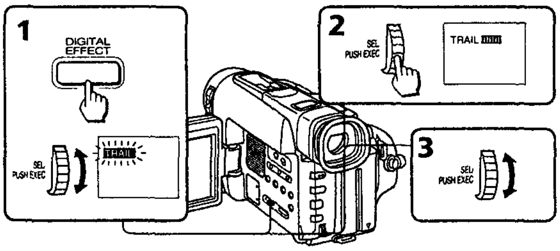
(3) Turn the control dial to adjust the vanishing time of the incidental image
The vanishing time increases with the number of the trail bars

Используя функцию запаздывания, Вы сможете записать изображение которое оставляет побочное изображение, например, след Звук записывается нормально Вы можете отрегулировать время исчезновения побочного изображения с помощью диска управления

(1) В то время,когда видеокамера находится в режиме готовности или в режиме записи нажмите кнопку DIGITAL EFFECT и поворачиваите диск управления до тех пор пока не начнет мигать индикатор TRAIL

(2) Нажмите диск управления
Высветится индикатор TRAIL и появятся полосы следа

(3) Поверните диск управления, чтобы отрегулировать время исчезновения побочного изображения
Время исчезновения увеличивается пропорционально количеству полос следа



To cancel the trail function

Press DIGITAL EFFECT

Notes on the trail function

- The following functions do not work during trail mode
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
- When you set the POWER switch to OFF, the trail function will be cancelled automatically

Для отмены функции запаздывания

Нажмите кнопку DIGITAL EFFECT

Примечания относительно функции запаздывания

- В режиме запаздывания следующие функции не работают
  - Функции, при которых используется кнопка FADER
  - Режим низкой освещенности из серии PROGRAM AE
- Если Вы установите переключатель POWER в положение OFF, функция запаздывания будет отменена автоматически

Using slow shutter

Использование медленного затвора

If you want to record a dark picture more brightly, or make the movement of the subject seem lively, set the shutter speed to 1/25, 1/12, 1/6 or 1/3 (slow shutter)

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the SLOW SHTR (shutter) indicator flashes

(2) Press the control dial
The SLOW SHTR indicator lights up and the shutter speed number (1 - 4) appears

(3) Turn the control dial to select the shutter speed
As the shutter speed number becomes bigger, the shutter speed becomes slower

Shutter speed number	*Shutter speed*
SLOW SHTR 1	1/25
SLOW SHTR 2	1/12
SLOW SHTR 3	1/6
SLOW SHTR 4	1/3

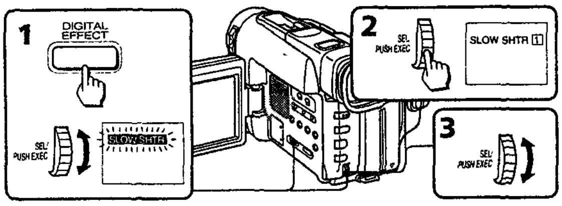
Если Вы хотите записать темное изображение более ярко или же сделать движения объекта оживленными, установите скорость затвора на 1/25, 1/12, 1/6 или 1/3 (медленный затвор)

(1) В то время,когда видеокамера находится в режиме готовности или в режиме записи, нажмите кнопку DIGITAL EFFECT и поворачивайте диск управления до тех пор пока не начнет мигать индикатор SLOW SHTR (затвор)

(2) Нажмите диск управления
Высветится индикатор SLOW SHTR и появится номер скорости затвора (1-4)

(3) Поверните диск управления, чтобы выбрать скорость затвора
Чем больше номер скорости затвора, тем скорость затвора медленнее

Номер скорости затвора	Скорость затвора
SLOW SHTR 1	1/25
SLOW SHTR 2	1/12
SLOW SHTR 3	1/6
SLOW SHTR 4	1/3



To cancel the slow shutter function

Press DIGITAL EFFECT

When recording with the slow shutter function

Auto focus may not be effective Focus manually using a tripod

Notes on the slow shutter function

- You cannot use the following functions during recording with the slow shutter function
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
  - Exposure
- When you set the POWER switch to OFF, the slow shutter function will be cancelled automatically

Для отмены функции медленного затвора

Нажмите кнопку DIGITAL EFFECT

При записи с использованием функции медленного затвора

Автоматическая фокусировка может быть *неэффективной Выполняйте фокусировку* вручную, используя треногу

Примечания относительно функции медленного затвора

- Во время записи с использованием функции медленного затвора Вы не сможете использовать следующих функций
  - Функции, при которых используется кнопка FADER
  - Режим низкой освещенности из серии PROGRAM AE
  - Экспозиция
- Если Вы установите переключатель POWER в положение OFF, функция медленного затвора будет отменена автоматически

Adding an old movie type atmosphere to pictures

Придание изображению оттенка старинного кино

Using the old movie function, you can record the picture such as an old movie The camcorder automatically sets the wide mode to CINEMA, picture effect to SEPIA, and the appropriate shutter speed

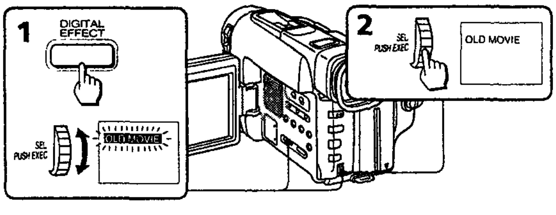
(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the OLD MOVIE indicator flashes

(2) Press the control dial
The OLD MOVIE indicator lights up

Используя функцию старинного кино Вы сможете записать изображение в виде старинного кино Видеокамера автоматически установит широкоформатный режим в положение CINEMA, эффект изображения в положение SEPIA и выберет соответствующую скорость затвора

(1) В то время, когда видеокамера находится в режиме готовности или в режиме записи нажмите кнопку DIGITAL EFFECT и поворачивайте диск управления до тех пор, пока не начнет мигать индикатор OLD MOVIE

(2) Нажмите диск управления
Высветится индикатор OLD MOVIE



To cancel the old movie function

Press DIGITAL EFFECT

Notes on the old movie function

- The following functions do not work during old movie mode
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
  - Exposure
- When you set the POWER switch to OFF, the promotion function will be cancelled automatically

Для отмены функции старинного кино

Нажмите кнопку DIGITAL EFFECT

Примечания относительно функции старинного кино

- В режиме старинного кино следующие функции не работают
  - Функции, при которых используется кнопка FADER
  - Режим низкой освещенности из серии PROGRAM AE
  - Экспозиция
- Если Вы установите переключатель POWER в положение OFF, функция старинного кино будет отменена автоматически

Focusing manually

Ручная фокусировка

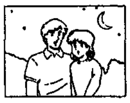
When to use manual focus

In the following cases you should obtain better results by adjusting the focus manually

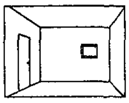
При использовании ручной фокусировки

В следующих случаях Вы можете получить лучшие результаты, отрегулировав фокусировку вручную

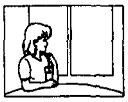
[a]



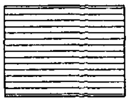
[b]



[c]



[d]



- Insufficient light **[a]**
- Subjects with little contrast - walls, sky, etc **[b]**
- Too much brightness behind the subject **[c]**
- Horizontal stripes **[d]**
- Subjects through frosted glass
- Subjects beyond nets etc
- Bright subject or subject reflecting light
- Shooting a stationary subject when using a tripod

- Недостаточная освещенность **[a]**
- Объекты со слабым контрастом – стены, небо и т д **[b]**
- Слишком сильная яркость позади объекта **[c]**
- Горизонтальные полосы **[d]**
- Съемка объетка через матовое стекло
- Объект находится за сеткой и т д
- Яркий объект или объект, отражающий свет
- Съемка неподвижного объекта с использованием треноги

Focusing manually

When focusing manually, first focus in telephoto before recording, and then reset the shot length

(1) Set FOCUS to MANUAL The ⦿ indicator appears in the viewfinder

(2) Move the power zoom lever to the "T" side until the lever reaches the end

(3) Turn the NEAR/FAR dial to achieve a sharp focus

(4) Set the desired shot length using the power zoom lever

Ручная фокусировка

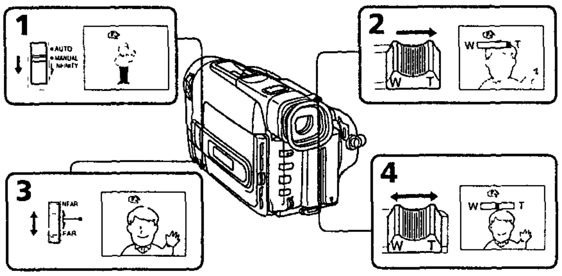
При ручной фокусировке сперва перед записью выполнить фокусировку в режиме телефото, а затем установить расстояние для съемки

(1) Установите FOCUS на MANUAL Индикатор ⦿ появится в видомскателе

(2) Двигайте рычаг приводного трансфокатора в сторону "T" пока рычаг не достигнет конца

(3) Вращайте диск NEAR/FAR для достижения четкой фокусировки

(4) Установите желаемое расстояние для съемки с использоваине рычага приводного трансфокатора



To return to autofocus mode

Set FOCUS to AUTO The ⦿ indicator in the viewfinder disappears

Shooting in relatively dark places

Shoot at wide-angle after focusing in the telephoto position

To record a very distant subject

Push FOCUS down to INFINITY The lens focuses on the most distant subject while FOCUS is held down When it is released manual focus mode is resumed

Use this function when shooting through a window or a screen, to focus on a most distant subject

Notes on manual focusing

The following indicators may appear

▲ when recording a very distant subject

♟ when the subject is too close to focus on

Для возврата к режиму автоматической фокусировки

Установить FOCUS на AUTO Индикатор ⦿ ичезнет из видоискателя

Съемка в относительно темных местах

Выполняйте съемку в положении широкого угла после фокусировки в положении телефото

Для записи очень удаленного объекта

Нажмите FOCUS вниз до INFINITY Объектив фокусируется на самом удаленном объекте, пока FOCUS удерживается внизу Когда переключатель будет отпущен, режим ручной фокусировки будет восстановлен

Используйте данную функцию при съемке через окно или ветровое стекло для фокусировки на наиболее отдаленные объекты

Примечания к ручной фокусировке

Могут появляться следующие индикаторы

▲ при записи учень удаленного объекта

♟ при фокусировке на очень близкий объект

Using the PROGRAM AE function

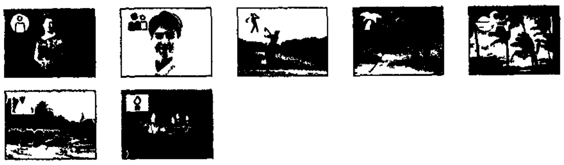
Selecting the best mode

You can select one of six PROGRAM AE (Auto Exposure) modes to suit your shooting situation, referring to the following

Использование функции PROGRAM AE

Выбор наилучшего режима

Вы можете выбрать один из семи режимов PROGRAM AE(автоматической экспозиции), который подходит для съемки в Вашей ситуации, ссылаясь на следующее



⦿ Spotlight mode
For subjects in spotlight, such as at the theatre or a formal event

Soft Portrait mode
For zooming in on a still subject in telephoto mode or for a subject behind an obstacle such as a screen Creates a soft background for subjects such as people or flowers, and faithfully reproduces skin colour

Sports Lesson mode
For recording fast-moving subjects such as in tennis or golf games

Beach & Ski mode
For people or faces in strong light or reflected light, such as at a beach in midsummer or on a ski slope

Sunset & Moon mode
For recording subjects in dark environments such as sunsets, fireworks, neon signs, or general night views

Landscape mode
For distant subjects such as mountains or when recording a subject behind an obstacle such as a window or screen

Low Lux mode
For recording a subject in insufficient light Subject becomes bright

⦿ Режим прожекторного освещения
Для объектов, находящихся под прожекторным освещением, как например, в театре или на официальном приеме

Мягкий портретный режим
Для фокусировки на неподвижный объект в режиме телефото или на объект позади препятствия такого как сетка Данный режим создает мягкий фон для таких объектов, как люди или цветы и верно воспроизводит телесный цвет

Режим спортивных занятий
Для записи быстродвигающихся объектов как например при игре в теннис или гольф

Пляжный и лыжный режим
Для людей обращенных к сильному свету или отраженному свету как например, в середине лета на пляже или на лыжном склоне

Режим захода солнца и луны
Для записи объектов в темных окружающих условиях как например, заход солнца фейерверки, неоновые рекламы или обычные ночные пейзажи

Ландшафтный режим
Для удаленных объектов (на расстоянии более 10 метров) как, например, горы или при записи объекта позади препятствия, как, например, сетка

Режим низкой освещенности
Предназначен для съемки объекта при недостаточной освещенности

Using the PROGRAM AE function

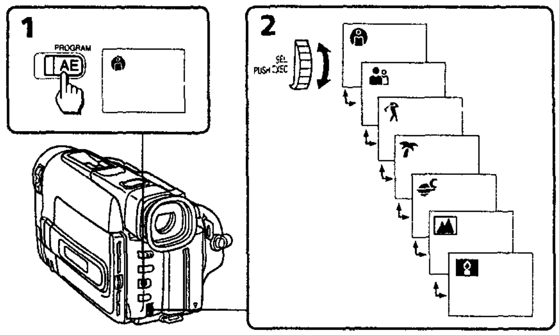
(1) Press PROGRAM AE

(2) Turn the control dial to select the desired PROGRAM AE mode

Использование функции PROGRAM AE

(1) Нажмите PROGRAM AE

(2) Вращаите регулировочный диск для выбора желаемого режима PROGRAM AE



To turn off program AE

Press PROGRAM AE

Notes on focus setting

- In the Spotlight, Sports lesson and Beach & Ski modes, you cannot take close-ups because the camcorder is set to focus only on subjects in the middle to far distance
- In the Sunset & Moon and Landscape modes, the camcorder is set to focus only on distant subjects

Notes on PROGRAM AE

- The following functions do not work during PROGRAM AE mode, except for Low Lux
  - Slow shutter
  - Old movie
- The following functions do not work during Low Lux mode
  - Functions using the DIGITAL EFFECT button
  - Overlap
  - Wipe
  - Exposure

Для выключения функции программы AE

Нажмите PROGRAM AE

Примечания к установке фокуса

- В режимах прожекторного освещения спортивных занятий, атакже в пляжном и лыжном режимах Вы не можете снимать крупным планом так как видеокамера фокусируется только на объекты средней и дальней дистанции
- В режимах захода солнца и луны и ландшафтном режиме видеокамера фокусируется только на удаленные объекты

Примечания относительно PROGRAM AE

- В режиме PROGRAM AE следующие функции не работают, кроме режима низкой освещенности
  - Медленный затвор
  - Старинное кино
- В режиме низкой освещенности не работают следующие функции
  - Функции при которых не используется кнопка DIGITAL EFFECT
  - Наложение изображений
  - Вытеснение шторкой
  - Экспозиция

Shooting with backlighting

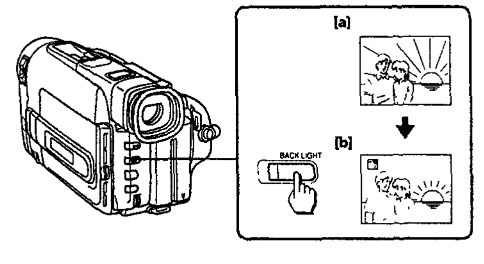
When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT function

Press BACK LIGHT The ☒ indicator appears in the viewfinder or on the LCD screen

Съемка с задней подсветкой

Если Вы снимаете объект с источником света позади объекта или объект на светлом фоне, используйте функцию BACK LIGHT

Нажмите BACK LIGHT Индикатор ☒ появится в видоискателе или на экране ЖКД



[a] Subject is too dark because of backlight

[b] Subject becomes bright with backlight compensation

After shooting

Be sure to release this adjustment condition by pressing BACK LIGHT again The ☒ indicator disappears Otherwise, the picture will be too bright under normal lighting conditions

This function is also effective under the following conditions

- On snow, e g at a ski resort
- At the beach under strong sunshine
- A subject with a light source nearby or a mirror reflecting light
- A white subject against a white background Especially when you shoot a person wearing shiny clothes made of silk or synthetic fiber, his or her face tends to become dark if you do not use this function

To make a fine adjustment

You can adjust the exposure manually However, when you adjust the exposure manually, BACK LIGHT does not operate

[a] Объект является слишком темным из-за задней подсветки

[b] Объект становится ярким с помощью компенсации задней подсветки

После съемки

Не забудьте отменить состояние этой регулировки путем нажатия BACK LIGHT снова Индикатор ☒ исчезнет В противном случае изображение будет слишком ярким при нормальных освещения

Данная функция будет эффективной при следующих условиях

- На снежном фоне, например на лыжном курорте
- На пляже под сильным солнцем
- Для объекта, расположенного рядом со световым источником или с зеркалом отражающим всет
- Белый объект на белом фоне Особенно, когда Вы снимаете человека в блестящей одежде из шелка или синтетического волокна, его или ее лицо может стать темным, если Вы не будете использовать данную функцию

Для выполнения тонкой регулировки

Вы можете отрегулировать экпозицию вручную Однако при регулировке экспозиции вручную функция BACK LIGHT не работает

Adjusting the exposure

When to adjust the exposure

Adjust the exposure manually under the following cases

[a]

[b]

[a]
- The background is too bright (back lighting)
- Insufficient light most of the picture is dark

[b]
- Bright subject and dark background
- To record the darkness faithfully

Регулировка экспозиции

Во время регулировки экспозиции

В следующих случаях следует отрегулировать экспозицию вручную

[a]
- Фон является слишком ярким (задняя подсветка)
- Недостаточное освещение большая часть изображения является темной

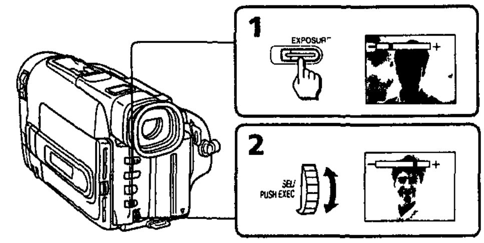
[b]
- Яркий объект на темном фоне
- Для уверенной записи в темных условиях

Adjusting the exposure

(1) Press EXPOSURE
(2) Turn the control dial to adjust the brightness

Регулировка экспозиции

(1) Нажмите EXPOSURE
(2) Вращайте регулировочный диск для регулировки яркости



To return to automatic exposure mode
Press EXPOSURE again

Shooting with the sun behind you
If the light source is behind your subject, or in the following situations, the subject will be recorded too dark
- The subject is indoors and there is a window behind the subject
- Bright light sources are included in the scene
- When shooting a person wearing white or shiny clothes in front of a white background, the face will be recorded too dark

Shooting in the dark
We recommend you to use a video light (not supplied) To get the best colour you must maintain a sufficient light level

When you adjust the exposure manually
- BACK LIGHT does not work
- If you press PROGRAM AE, the camcorder automatically returns to automatic exposure mode

Для возврата к режиму автоматической экспозиции
Снова нажмите EXPOSURE

Производите съемку, когда солнце у Вас за спиной
Если источник света находится позади Вашего объекта, или в следующих условиях объект будет записан слишком темным
- Объект внутри помещения и позади объекта находится окно
- Яркие источники света расположены на сцене
- При съемке человека в белой или блестящей одежде на белом фоне лицо на записи будет слишком темным

Съемка в темных условиях
Мы рекомендуем Вам использовать видеофонарь (не прилагается) Для получения наилучшего цвета, Вы должны поддерживать достаточный уровень света

При ручной регулировке экспозиции
- BACK LIGHT работать не будет
- Если Вы нажмете PROGRAM AE, видеокамера автоматически возвращается к режиму автоматического экспонирования

Releasing the STEADY SHOT function

When you shoot, the «⌒» indicator appears in the viewfinder This indicates that the Steady Shot function is working and the camcorder compensates for camera-shake

You can release the Steady Shot function when you do not need to use the Steady Shot function Do not use the Steady Shot function when *shooting a stationary object with a tripod*

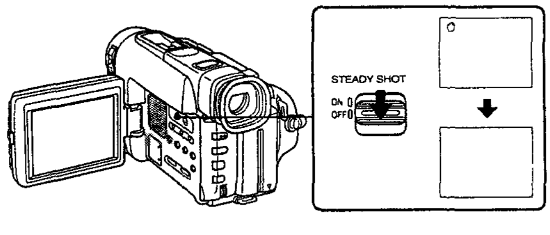
Set STEADY SHOT to OFF

Отключение функции STEADY SHOT

Когда Вы производите съемку, индикатор («⌒») появляется в видоискателе Это указывает, что функция устойчивой съемки работает для компенсации дрожания видеокамеры

Вы можете отключить функцию устойчивой съемки, если Вам не требуется использовать *эту функцию Не используйте функцию* устойчивой съемки при съемке неподвижного объекта с помощью треноги

Установите STEADY SHOT на OFF



To activate the Steady Shot function again
Set STEADY SHOT to ON

Notes on the Steady Shot function
- The Steady Shot function will not correct excessive camera-shake
- When you switch the STEADY SHOT function on or off the exposure may fluctuate
- Steady Shot does not operate in 16 9 FULL mode If you set STEADY SHOT to ON, the «⌒» indicator flashes

Для активизации функции устойчивой съемки снова
Установите STEADY SHOT на ON

Примечания к функции устойчивой съемки
- Функция устойчивой съемки не сможет откорректировать чрезмерное дрожание видеокамеры
- При включении или выключении функции STEADY SHOT экспозиция может колебаться
- Функция устойчивой съемки не работает в режиме 16 9 FULL Если Вы установите STEADY SHOT в положение ON, начнет мигать индикатор «⌒»

Superimposing a title

You can select one of eight preset titles You can also select the language, position, and colour of titles in the menu system

Selecting the language

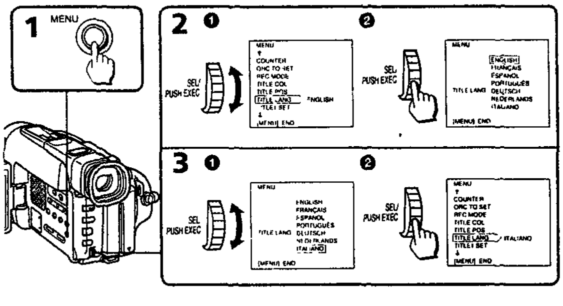
(1) While the camcorder is in Standby mode, *press MENU to display the menu*
(2) Turn the control dial to select TITLE LANG, then press the dial
(3) Turn the control dial to select the desired language, then press the dial
(4) Press MENU to erase the menu display

Наложение надписи

Вы можете выбрать одну из восьми предварительно установленных надписей Вы можете также выбирать язык, положение и цвет надписей в системе меню

Выбор языка

(1) В то время, когда видеокамера находится *в режиме готовности, нажмите кнопку* MENU для отображения меню
(2) Поверните диск управления для выбора TITLE LANG, а затем нажмите диск
(3) Поверните диск управления для выбора желаемого языка а затем нажмите диск
(4) Нажмите кнопку MENU для того, чтобы удалить индикацию меню



Using titles

To add the title from the beginning
(1) While the camcorder is in Standby mode, press TITLE repeatedly until the desired title appears
Each time a new title appears, it is flashing When the desired title appears, wait for it to stop flashing
(2) Press START/STOP to start recording
(3) When you want to stop recording the title, press TITLE

Использование надписей

Для наложения надписи от начала
(1) Когда видеокамера находится в режиме готовности, повторно нажимайте TITLE, пока не появится желаемая надпись
Каждый раз при появлении новой надписи она мигает
Когда появится желаемая надпись, подождите, пока она перестанет мигать
(2) Нажмите START/STOP для начала записи
(3) Когда Вы захотите остановить запись надписи, нажмите TITLE

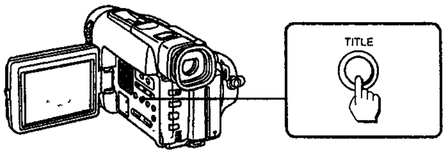
Superimposing a title / Наложение надписи

To add the title while you are recording

(1) While the camcorder is in Standby mode press TITLE repeatedly until the desired title appears
Each time a new title appears, it is flashing
(2) When the desired title appears, wait for it to stop flashing, and press TITLE again to erase the title from the display
(3) Press START/STOP to start recording
(4) When you reach the point where you want to add the title, press TITLE
(5) When you want to stop recording the title, press TITLE again

Для наложения надписи во время записи

(1) Когда видеокамера находится в режиме готовности, повторно нажимайте TITLE, пока не появится желаемая надпись
Каждый раз при появлении новой надписи она магает
(2) Когда появится желаемая надпись, подождите, пока она перестанет мигать и нажмите TITLE снова для стирания надписи с дисплея
(3) Нажмите START/STOP для начала записи
(4) Когда Вы достигните точки, где Вы хотите наложить надпись нажмите TITLE
(5) Когда Вы захотите остановить запись надписи, нажмите TITLE снова



Titles cycle as follows

Original title 1 → Original title 2 → HELLO! → HAPPY BIRTHDAY → HAPPY HOLIDAYS → CONGRATULATIONS! → OUR SWEET BABY → WEDDING → VACATION → THE END
After "THE END" appears, the title display disappears, and then Original title 1 returns
The titles are displayed in the language you selected in the menu system

Notes on superimposing a title

- If you have not made any original titles, they are not displayed
- You cannot select a title while you are recording
- FADER does not work while the title is displayed
- You cannot simultaneously record the title and the date or time
- You cannot record the title during fade-in/fade-out
- If you display the menu while superimposing a title, the title is not recorded while the menu is being displayed

Надписи циклически изменяются следующим образом

Исходная надпись 1 → Исходная надпись 2 → HELLO! → HAPPY BIRTHDAY → HAPPY HOLIDAYS → CONGRATULATIONS! → OUR SWEET BABY → WEDDING → VACATION → THE END
После появления "THE END" индикация надписи исчезает, а затем возвращается исходная надпись 1
Надписи отображаются на языке, который Вы выбрали в системе меню

Примечания к наложению надписи

- Если Вы не создали ни одной исходной надписи, то они не будут отображаться
- Вы не можете выбрать надпись во время записи
- Функция FADER не работает во время отображения надписи
- Вы не можете одновременно записывать надпись и дату или время
- Вы не можете записать надпись во время плавного введения/выведения изображения
- Если Вы отображаете меню во время наложения надписи, то надпись не будет записываться, пока отображается меню

Superimposing a title / Наложение надписи

To select the colour of the title

(1) While the camcorder is in Standby mode, press MENU to display the menu
(2) Turn the control dial to select TITLE COL, then press the dial
(3) Turn the control dial to select the desired colour, then press the dial
You can chose from the following 7 colours
WHITE ←→ YELLOW ←→ VIOLET ←→ RED ←→ CYAN ←→ GREEN ←→ BLUE
(4) Press MENU to erase the menu display

To select the position of the title

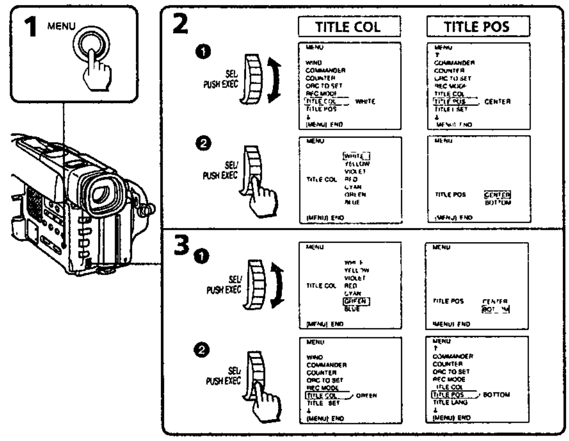
(1) While the camcorder is in Standby mode, press MENU to display the menu
(2) Turn the control dial to select TITLE POS, then press the dial
(3) Turn the control dial to select the desired position (CENTER or BOTTOM), then press the dial
(4) Press MENU to erase the menu display

Для выбора цвета надписи

(1) Когда видеокамера находится в режиме готовности нажмите MENU для отображения меню
(2) Поверните диск управления для выбора TITLE COL, а затем нажмите диск
(3) Поверните регулировочный диск для выбора желаемого цвета, а затем нажмите диск
Вы можете выбирать из следующих 7 цветов
WHITE ←→ YELLOW ←→ VIOLET ←→ RED ←→ CYAN ←→ GREEN ←→ BLUE
(4) Нажмите MENU для стирания отображения меню

Для выбора положения надписи

(1) Когда видеокамера находится в режиме готовности, нажмите MENU для отображения меню
(2) Поверните диск управления для выбора TITLE POS, а затем нажмите диск
(3) Поверните регулировочный диск для выбора желаемого положения (CENTER или BOTTOM), а затем нажмите диск
(4) Нажмите MENU для стирания отображения меню



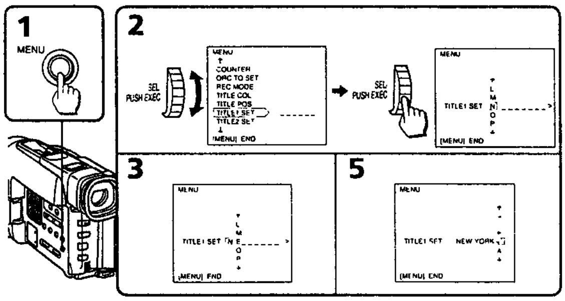
Making your own titles / Создание Ваших собственных надписей

You can make up to two titles and store them in the camcorder We recommend to eject the cassette before you begin
Your title can have up to 22 characters

(1) While the camcorder is in Standby mode, press MENU to display the menu
(2) Turn the control dial to select TITLE1 SET or TITLE2 SET, then press the dial
(3) Turn the control dial to select the desired character, then press the dial
(4) Repeat step 3 until you finish the title
(5) When you are finished, turn the control dial to select ↵ then press the dial
(6) Press MENU to erase the menu display

Вы можете создать две надписи и занести их в память видеокамеры Мы рекомендуем вытолкнуть кассету перед началом операции
Ваша надпись мозет содержать до 22 знаков

(1) Когда видеокамера находится в режиме готовности, нажмите MENU для отображения меню
(2) Поверните регулировочный диск для выбора TITLE1 SET или TITLE2 SET а затем нажмите диск
(3) Поверните регулировочный диск для выбора желаемого знака а затем нажмите диск
(4) Повторяйте пункт 3 до тех пор, пока Вы не закончите надпись
(5) По окончании поверните регулировочныи диск для выбора ↵, а затем нажмите диск
(6) Нажмите MENU для стирания отображения меню



Making your own titles / Создание Ваших собственных надписей

To edit a title you have stored

In step 2 select TITLE1 SET or TITLE2 SET, depending on which title you want to edit, then change the title
To move the cursor to the character on the left side, select ←

If you enter 22 characters in step 4

The title is stored immediately (and you can skip step 5)

If you take 5 minutes or longer to enter characters while a cassette is in the camcorder

The power goes off automatically Characters you have entered remain Turn STANDBY down once and then up again, then proceed from step 1

To delete a title

At the leftmost character position, select ↵ and press the dial Do not erase the title by selecting empty spaces If you do so, a title full of empty spaces is stored

Для редактирования занесеной в память надписи

В пункте 2 выберите TITLE1 SET или TITLE2 SET, в зависимости от того, какую надпись Вы хотите отредактировать а затем измените надпись
Для перемещения курсора к знаку с левой стороны выберите ←

Если Вы ввели 22 знака в пункте 4

Надпись сразу же запоминается (и Вы можете пропустить пункт 5)

Если Вы затратите 5 минут или более на введение знаков, когда кассета находится в видеокамере

Питание выключится автоматически Знаки, которые Вы ввели остаются Поверните STANDBY вниз а затем снова вверх и начните процедуру с пункта 1

Для стирания надписи

В крайнем слева положении для знака выберите ↵ и нажмите диск Не стирайте, пожалуйста, надпись путем выбора пустых пробелов Если Вы так сделаете, то надпись, состоящая полностью из пустых пробелов будет занесена в память

Re-recording a picture in the middle of a recorded tape / Перезапись изображение в середине записанной ленты

You can insert a scene in the middle of a recorded tape by setting the starting and ending points The previous recorded portion will be erased When the RC time code appears, set COUNTER to NORMAL in the menu system to display the tape counter

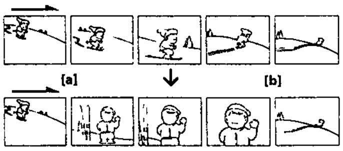
Вы можете вставить сцену в середине записанной ленты, установив точки начала и окончания Ранее записанная часть будет стерта Когда появляется временной код RC, установите COUNTER и NORMAL в системе меню для отображения счетчика ленты

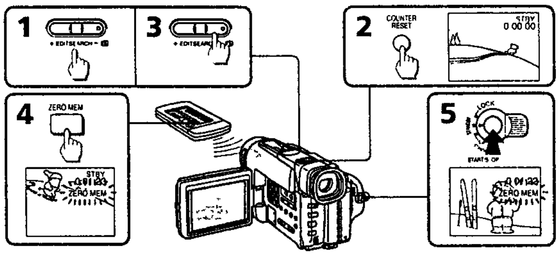
Re-recording a picture in the middle of a recorded tape

Перезапись изображения в середине записанной ленты

(1) While the camcorder is in Standby mode, keep pressing the + (forward playback) or – (reverse playback) side of EDITSEARCH, and release the button where you want to end the insertion [b] The camcorder enters Standby mode again
(2) Press COUNTER RESET The counter resets to zero
(3) Keep pressing the – side of EDITSEARCH and release the button at the point where you want to start the insertion [a]
(4) Press ZERO MEM on the Remote Commander The ZERO MEM indicator flashes
(5) Press START/STOP to start recording The recording stops automatically at the counter zero point

(1) Когда видеокамера находится в режиме готовности, держите нажатой сторону + (воспроизведение вперед) или – (обратное воспроизведение) кнопки EDITSEARCH и отпустите кнопку в точке, где Вы хотите закончить вставку [b] Видеокамера снова войдет в режим готовности
(2) Нажмите COUNTER RESET Счетчик сбрасывается на нуль
(3) Держите нажатой сторону – кнопки EDITSEARCH и отпустите кнопку в точке, где Вы хотите начать вставку [a]
(4) Нажмите ZERO MEM на пульте дистанционного упраления Индикатор ZERO MEM будет мигать
(5) Нажмите START/STOP для начала записи Запись остановится автоматически в нулевой точке счетчика





To change the end point

Press ZERO MEM to erase the ZERO MEM indicator, then repeat steps 2 to 5

Для изменения точки окончания

Нажать ZERO MEM для стирания индикатора ZERO MEM, а затем повторить пункты 2 - 5

Re-recording a picture in the middle of a recorded tape

Перезапись изображения в середине записанной ленты

Notes on re-recording

- The picture and the sound may be distorted at the end of the inserted portion when it is played back
- If you re-record on the portion which contains non-recorded section, the zero memory function may not work correctly
- When the START/STOP MODE switch is set to 5SEC or ⊥, you cannot use the zero memory function

Примечания к перезаписи

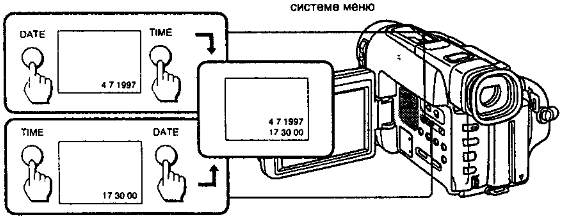
- Изображение и звук могут быть искажены в конце вставленной части при ее воспроизведении
- Если Вы производите перезапись на участке, где имеются незаписанные места, функция памяти нуля может работать неправильно
- Если переключатель START/STOP MODE установлен в положение 5SEC или ⊥, Вы не сможете использовать функцию памяти нуля

Recording with the date/time

Запись с датой/временем

Before you start recording or during recording, press DATE or TIME Press DATE (or TIME) then press TIME (or DATE) to display the date and time together
The clock is already set at the factory, to London time for United Kingdom and to Paris time for the other European countries You can reset the clock in the menu system

Перед тем, как Вы начнете запись нажмите DATE или TIME Вы можете записать дату или время, отображаемые в видоискателе или на экране ЖКД вместе с изображением Нажмите кнопку DATE (или кнопку TIME), затем нажмите кнопку TIME (или кнопку DATE) для отображения даты и времени одновременно
Часы уже установлены на заводе-изготовителе на лондонское время для Соединенного Королевства и на парижское время для других европейских стран Вы можете выполнить установку часов заново в системе меню



To stop recording with the date and/or time

Press DATE and/or TIME again The date and/or time indicator disappears The recording continues

Note on the date or time indicator

If you press DATE or TIME while you are recording in CINEMA mode, the indicators in the viewfinder or on the LCD screen move upwards

Для останова записи с датой и/или временем

Нажмите DATE и/или TIME снова Индикатор даты и/или времени исчезнет Запись будет продолжаться

Примечание к индикатору даты или времени

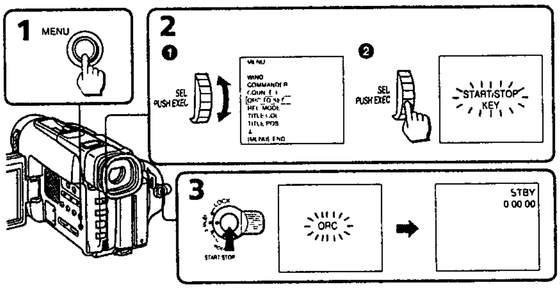
Если Вы нажмете DATE или TIME во время записи в режиме CINEMA, индикаторы в видоискателе или на экане ЖКД перемещаются вверх

Optimizing the recording condition

Оптимизация состояния записи

Use this feature to check the tape condition before recording, so that you can get the best possible picture (ORC)
(1) While the camcorder is in Standby mode, press MENU to display the menu
(2) Turn the control dial to select ORC TO SET then press the dial
START/STOP KEY" flashes
(3) Press START/STOP
The camcorder takes about 5 seconds to check the tape condition and then returns to Standby mode

Используйте данную функцию для проверки состояния ленты перед записью, так, чтобы Вы смогли получить наилучшее по возможности изображение (ORC)
(1) Когда видеокамера находится в режиме готовности, нажмите MENU для отображения меню
(2) Поверните регулировочный диск для выбора ORC TO SET а затем нажмите диск
'START/STOP KEY" будет мигать
(3) Нажмите START/STOP
Видеокамера произведет съемку в течение около 5 секунд для проверки состояния ленты, а затем вернется в режим готовности



Each time you insert the cassette

Perform the above procedures

To see if the tape condition has been checked

If the ORC indicator lights up in the display window, the tape condition has been checked

Notes on the ORC function

- When you set ORC TO SET, the recording on the tape is erased for about 0 1 second so that the camcorder can check the tape condition Be careful when you use a recorded tape The 0 1 second blank is erased if you record from the point where you set ORC TO SET for more than 2 seconds, or if you record over the blank
- You cannot use this function on a tape with the red mark on the cassette exposed

Каждый раз при вставке кассеты

Выполняйте вышеописанную процедуру

Для подтверждения, что состояние ленты уже было проверено

Если в окошке дисплея высветится индикатор ORC, состояние ленты проверено

Примечания относительно функции ORC

- Если Вы установите ORC TO SET, запись на ленте будет стираться примерно 0 1 секунды, так, что видеокамера сможет проверить состояние ленты Будьте осторожны при использовании записанной ленты Промежуток в 0,1 секунды будет стерт если Вы выполняете запись с места, где Вы установили ORC TO SET более чем на две секунды или же, если Вы выполняете запись на пустом месте
- Вы не сможете использовать эту функцию для ленты, на котоpой выставлен красный лепесток

Watching on a TV screen

Просмотр на экране телевизора

Connect the camcorder to your VCR or TV to watch the playback picture on the TV screen When monitoring the playback picture by connecting the camcorder to your TV, we recommend you to use mains for the power source

While playing back on a TV screen, close the LCD panel Otherwise, picture distortion may occur

Connecting directly to a VCR/TV with Video/Audio input jacks

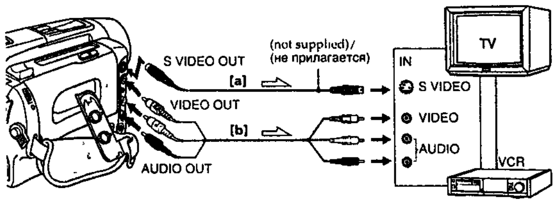
Open the jack cover With using the supplied A/V connecting cable connect the camcorder to the LINE IN inputs on the TV or VCR connected to the TV Set the TV/VCR selector on the TV to VCR When connecting to the VCR, set the input selector on the VCR to LINE
If your VCR or TV has an S video jack, connect using the S video cable (not supplied) [a] to obtain a high quality picture If you are going to connect the camcorder using the S video cable (not supplied) [a], you do not need to connect the yellow (video) plug of the A/V connecting cable [b]

Подсоедините видеокамеру к Вашему КВМ или телевизору для просмотра воспроизводимого изображения на экране телевизора
При просмотре воспроизводимого изображения посредством подсоединения видеокамеры к Вашему телевизору мы рекомендуем Вам использовать электрическую сеть в качестве источника питания

При воспроизведении на экране телевизора закройте панель ЖКД В противном случае может произойти искажение изображения

Подсоединение прямо к КВМ/телевизору с входными гнездами видео/аудио

Откройте гнездовую крышку При использовании прилагаемого соединительного аудиовидеошнура подсоедините видеокамеру к входным гнездам LINE IN на телевизоре или КВМ, подсоединенном к телевизору Установите селектор TV/VCR на телевизоре в положение VCR При подсоединении к КВМ установите входной селектор на КВМ в положение LINE
Если в Вашем КВМ или телевизоре имеется гнездо S-видео, выполните соединение с помощью шнура S-видео (не прилагается) [a] для получения высококачественного изображения Если Вы собираетесь подсоединить видеокамеру с использованием шнура S-видео (не прилагается) [a], Вам не нужно подсоединять желтый штекер (видео) соединительного аудиовидеошнура [b]



⇨ Signal flow/ Передача сигнала

Watching on a TV screen

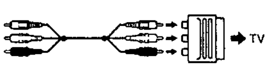
If your VCR or TV is a monaural type
Connect only the white plug for audio on both the camcorder and the VCR or the TV With this connection the sound is monaural even in stereo mode

If your TV/VCR has a 21-pin connector (EUROCONNECTOR)
Use the supplied 21-pin adaptor

Просмотр на экране телевизора

Если Ваш КВМ или телевизор монофонического типа
Подсоедините только белый разъем для аудиосигналов и к видеокамере и КВМ или телевизору При таком соединении звук будет монофоническим даже в стереофоническом режиме

Если в Вашем телевизоре/КВМ имеется 21-штырьковый соединитель (ЕВРОСОЕДИНИТЕЛЬ)
Используйте прилагаемый 21-штырьковый адаптер



To connect to a VCR or TV without Video/Audio input jacks
Use an RFU adaptor (not supplied)

Monitoring the picture from a TV or VCR
You can monitor the picture on the LCD screen or in the viewfinder Connect the camcorder to the outputs on the TV or VCR

Для подсоединения к КВМ или телевизору без входных гнезд видео/аудио
Используйте адаптер RFU (не прилагается)

Контроль изображения от телевизора или КВМ
Вы можете контролировать изображение на экране ЖКД или в видоискателе
Подсоедините видеокамеру к выходным гнездам на телевизоре или КВМ

Enjoying digital effect during playback

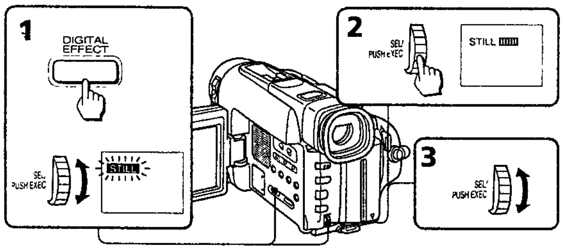
During playback, you can process a scene using the digital effect functions Still Flash motion Luminancekey and Trail For the features of each function, refer to previous pages
You can watch the processed picture on a TV or use it for editing on other video equipment You cannot record on this camcorder during this operation

(1) During playback press DIGITAL EFFECT and turn the control dial until the desired digital effect indicator (STILL FLASH, LUMI or TRAIL) flashes
(2) Press the control dial
The digital effect indicator lights up and the bars appear In still or luminancekey mode, the picture where you press the control dial is stored in memory as a still picture
(3) Turn the control dial to adjust the effect

Наслаждение цифровыми эффектами во время воспроизведения

Во время воспроизведения Вы можете видоизменять изображение, используя функции цифровых эффектов неподвижное изображение, мелькающее изображение яркостныи манипулятор и функция запаздывания Для ознакомления с каждой функциеи обратитесь к предыдущим страницам Вы можете наблюдать видоизмененное изображение на телевизоре на телевизоре или использовать его для монтажа на другую видеоаппаратуру Во время этой операции Вы не сможете выполнять запись на данной видеокамере

(1) Во время воспроизведения нажмите кнопку DIGITAL EFFECT и поворачивайте диск управления до тех пор пока не начнет мигать индикатор желаемого эффекта (STILL FLASH, LUMI или TRAIL)
(2) Нажмите диск управления
Высветится индикатор цифрового эффекта и появятся полосы В режиме стоп-кадра или яркостного манипулятора изображение там, где Вы нажмете регулировочный диск, будет сохранено в памяти как неподвижное изображение
(3) Поверните диск управления для регулировки эффекта



To cancel the digital effect function
Press DIGITAL EFFECT

Notes on the digital effect function
- In skip scan, slow or pause mode, noise appears on the picture
- When the digital effect indicator flashes rapidly, you cannot use the digital effect function

Для отмены функции цифровых эффектов
Нажмите функцию DIGITAL EFFECT

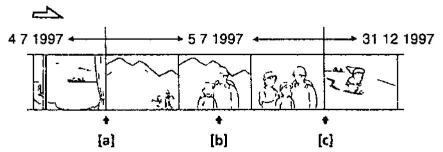
Примечания относительно функции цифровых эффектов
- В режиме поиска методом прогона а также в режимах паузы и замедленного воспроизведения на изображении появятся помехи
- Если индикатор цифровых эффектов быстро мигает, Вы не сможете использовать функцию цифровых эффектов

Searching the boundaries of recorded date

You can search for the boundary between recording dates using the Data Code automatically recorded on the tape
There are two modes
- Searching for the beginning of a specific date, and playing back from there **(Date Search)**
- Searching for the beginning of all days one after another, playing back about 10 seconds of each **(Date Scan)**

Поиск границ записанных дат

Вы можете осуществить поиск границ между записанными датами с использованием кода даты, автоматически записывающегося на ленте
Существует два режима
- Поиск начала определенной даты с воспроизведением от того места **(поиск даты)**
- Поиск начала всех дат, одной за другои с воспроизведением приблизительно в течение 10 секунд каждой из них **(сканирование дат)**



Each time you press DATE, the mode changes as follows

Date Search → Date Scan → nothing

To search for the beginning of a specific date
(1) Set the POWER switch to PLAYER
The video control buttons light up
(2) Press DATE on the Remote Commander
(3) When the current position is **[b]** press ◀◀ to search towards **[a]** or press ▶▶ to search towards **[c]**

Каждыи раз когда Вы нажимаете DATE режим изменяется следующим образом

Поиск даты → Сканирование даты → Выкл

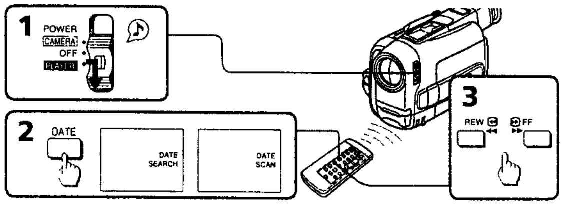
Для поиска начала определенной даты
(1) Установите переключатель POWER в положение PLAYER
Высветятся кнопки видеоконтроля
(2) Нажмите DATE на пульте дистанционного управлеиня
(3) Когда текущее положение -**[b]**, то нажмите ◀◀ для поиска в направлении **[a]** или нажмите ▶▶ для поиска в направлении **[c]**

Searching the boundaries of recorded date

To scan the beginning of all days
(1) Set the POWER switch to PLAYER
(2) Press DATE on the Remote Commander twice
(3) Press ◀◀ or ▶▶ Date Scan starts

Поиск границ записанных дат

Для сканирования начала всех дат
(1) Установите выключатель POWER в положение PLAYER
(2) Нажмите DATE на пульте дистанционного управления дважды
(3) Нажмите ◀◀ или ▶▶ Сканирование дат начинается



To stop searching or scanning
Press one of the following buttons DATE , ▶, ■, ◀◀ or ▶▶

To view pictures during searching or scanning
Press ▶ and then press ◀◀ or ▶▶

If you do Date Search or Date Scan during playback
While the camcorder is looking for the date, a fast forward or rewind picture is displayed Some noise is inevitable

If you have erased or rewritten the index signal
The point at which the date changes may be out of position by about 10 seconds of playback

Notes on Date Search and Date Scan mode
- If a day s recording is not longer than 2 minutes, the camcorder may not accurately find its boundaries
- Date Search and Date Scan do not function on a tape recorded by a camcorder without the Data Code function

Для останова поиска или сканирования
Нажмите одну из следующих кнопок DATE, ▶, ■, ◀◀ или ▶▶

Для просмотра изображения во время поиска или сканирования
Нажмите ▶, а затем ◀◀ или ▶▶

Если Вы производите поиск даты или сканирование даты во время воспроизведения
Когда видеокамера осуществляет поиск даты, отображается изображение в режиме быстрои перемотки вперед или назад
Некоторые помехи при этом неизбежны

Если Вы стираете или перезаписываете индексный сигнал
Точка, в которой происходит изменение даты может изменить положение приблизительно на 10 секунд воспроизведения

Примечания к режиму поиска даты и сканированию дат
- Если дневная запись продолжается не более 2-х минут, то видеокамера может точно не найти границу
- Поиск даты и сканирование даты не функционируют на ленте, записаннои на видеокамере без функции кода данных

Returning to a pre-registered position

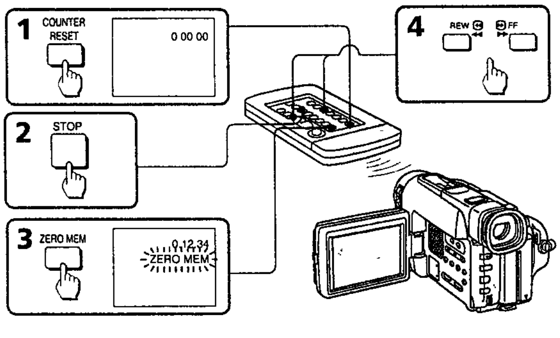
Возврат к предварительно зарегистрированной позиции

Using the Remote Commander you can easily go back to the desired point on a tape after playback Use the tape counter If the RC time code appears, set COUNTER to NORMAL in the menu system to display the tape counter

(1) During playback, press COUNTER RESET at the point you later want to locate The counter shows "0 00 00"
(2) Press ■ when you want to stop playback
(3) Press ZERO MEM on the Remote Commander The ZERO MEM indicator flashes
(4) Press ◀◀ to rewind or press ▶▶ to fast-forward the tape to the counter's zero point The tape stops automatically when the counter reaches approximately zero

Используя пульт дистанционного управления Вы можете легко вернуться к желаемой точке ленты после воспроизведения Используйте счетчик ленты Если появляется временной код RC, установите COUNTER на NORMAL в системе меню для отображения счетчика ленты

(1) Во время воспроизведения нажмите COUNTER RESET в точке, которую Вы желаете потом обнаружить Счетчик будет показывать "0 00 00"
(2) Нажмите ■, когда Вы захотите остановить воспроизведение
(3) Нажмите ZERO MEM на пульте дистанционного управления Индикатор ZERO MEM будет мигать
(4) Нажмите ◀◀ для ускоренной перемотки ленты назад или ▶▶ для ускоренной перемотки ленты вперед до нулевой точки счетчика Лента останавливается автоматически, когда счетчик приблизительно достигнет нуля



Notes on the tape counter

- Something must be recorded on the tape in order for the tape counter to function Tape counter does not work on a blank tape
- There may be a discrepancy of several seconds from the actual time

Примечания к счетчику ленты

- Что-нибудь должно быть записано на ленте для того, чтобы счетчик ленты функционировал Счетчик ленты не работает при пустой ленте
- Может существовать расхождение на несколько секунд с фактическим временем

Notes on ZERO MEM

- When you press ZERO MEM, the counter's zero point is memorized Press ZERO MEM again before rewinding to cancel the memory
- This function is canceled automatically once the tape is rewound or advanced to the point you pre-registered
- ZERO MEM does not function during recording or playing back

Примечания к ZERO MEM

- Когда Вы нажимаете ZERO MEM нулевая точка счетчика запоминается Нажмите ZERO MEM снова перед ускоренной перемоткой для стирания памяти
- Эта функция отменяется автоматически, когда лента перемотается назад или вперед до точки которую Вы предварительно зарегистрировали
- Во время записи или воспроизведения функция ZERO MEM не работает

Locating the marking position

Нахождение отмеченного места

You can locate the beginning of a desired programme easily by marking an index signal during recording or playback and searching for it later

Вы можете легко обнаружить начало желаемой программы, отмечая индексные сигналы во время записи или воспроизведения и отыскивая их потом

Marking an index signal

You can mark an index signal during recording or playback

Отметка индексного сигнала

Вы можете записать индексный сигнал во время записи или воспроизведения

When marking at the beginning of recording or playback

Press INDEX MARK on the Remote Commander in recording standby or playback pause mode The INDEX MARK indicator appears in the viewfinder or the LCD screen with the MARK indicator flashing When recording or playback starts, the MARK indicator stops flashing This shows that the index signal is being marked Then the INDEX MARK indicator will disappear

При отметке в начале записи или воспроизведения

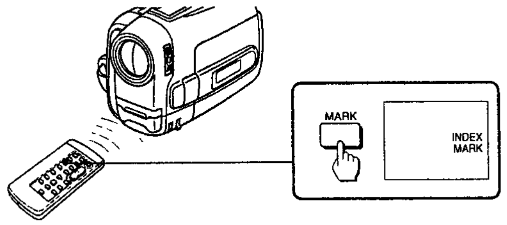
Нажмите INDEX MARK на пульте дистанционного управления в режиме готовности записи или паузы воспроизведения Индикатор INDEX MARK появляется в видоискателе или на экране ЖКД с мигающим индикатором MARK Когда запись или воспроизведение начинается индикатор MARK перестает мигать Это показывает, что индексный сигнал был записан Затем индикатор INDEX MARK исчезает

When marking during recording or playback

Press INDEX MARK on the Remote Commander at the point you want to locate later

При отметке во время записи или воспроизведения

Нажмите INDEX MARK на пульте дистанционного управления или на видеокамере в точке, которую Вы хотите потом обнаружить



Notes on marking

- Make sure you mark index signals at more than two-minute intervals Otherwise, you may not be able to search for them correctly
- If you stop recording while the index signal is being marked (the INDEX MARK indicator lights in the viewfinder), the search may not be completed correctly
- If you mark an index signal on the tape with the Data Code recorded, the Data Code will be erased at the point on which the index signal is marked When playing back this tape, the camcorder keeps displaying the Data Code immediately before the erased one
- A black band appears when you mark index signal during playback, and the sound cannot be heard This does not affect the picture and sound that are already recorded
- You cannot mark an index signal on a tape with the red mark on the cassette exposed
- You cannot mark an index signal on an NTSC-recorded tape
- You cannot mark the index signal during 5-second recording, recording only while pressing the START/STOP button, or during fade-out

Примечания к записи индексных сигналов

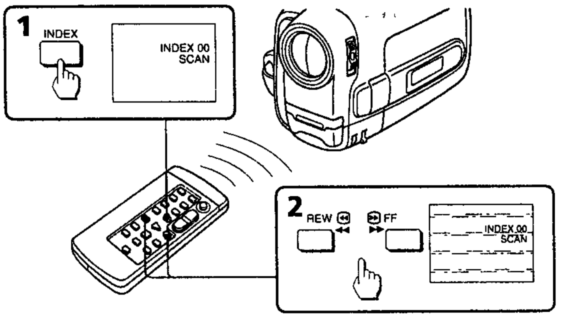
- Вы должны обязательно записывать индексные сигналы с более чем двухминутными интервалами В противном случае Вы не сможете находить их правильно
- Если Вы остановите запись в процессе занесения на ленту индексного сигнала (индикатор INDEX MARK горит в видоискателе), то поиск может не быть выполнен правильно
- Если Вы записываете индексный сигнал на ленте с записанным кодом данных, код данных будет стерт в точке записи индексного сигнала При воспроизедении такой ленты видеокамера отображает код данных непосредственно перед тем, который был стерт
- Черная полоса появляется, если Вы записываете индексный сигнал во время воспроизведения, и звук не будет прослушиваться Это не влияет на изображение и звук, которые уже были записаны
- Вы не можете записать индексный сигнал на ленте, если на кассете выставлена красная метка
- Вы не можете записать индексный сигнал на ленте, записанной в системе NTSC
- Вы не можете записать индексный сигнал во время 5-секундной записи, записи только при нажатии кнопки START/STOP или во время плавного выведения изображения

Scanning the beginning of each marking position – index scan

(1) Press INDEX on the Remote Commander during normal playback
(2) Press ◀◀ or ▶▶ The tape rewinds or advances rapidly and plays back for approximately 10 seconds from the point on which the index signal was marked If you want to continue playback, press ▶ When you do not press any button, the tape is automatically scanned to the next programme

Сканирование начала каждого отмеченного места - Индексное сканирование

(1) Нажмите INDEX на пульте дистанционного управления во время нормального воспроизведения
(2) Нажмите ◀◀ или ▶▶ Лента ускоренно перематывается и воспроизводится приблизительно в течение 10 секунд от точки где был записан индексный сигнал Если Вы хотите продолжить воспроизведение, нажмите ▶ Если Вы не нажимаете кнопку, то лента автоматически осуществляет поиск следующей программы



To cancel index scan mode
Press ▶ Normal playback resumes

Для отмены режима индексного сканирования
Нажмите ▶ Нормальное воспроизведение будет восстановлено

Locating the desired marking position – index search

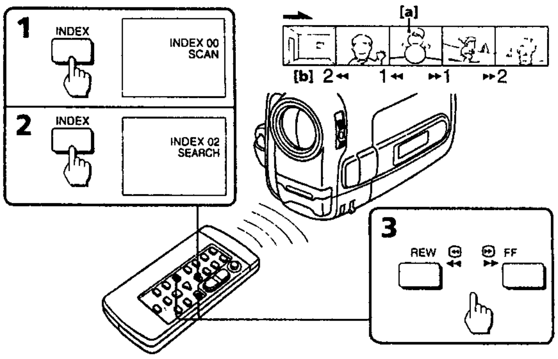
(1) Press INDEX on the Remote Commander during stop or playback mode
(2) Press INDEX repeatedly until the index number of the desired programme is displayed in the viewfinder or on the LCD screen
(3) Press ◀◀ or ▶▶ Playback starts from the beginning of the desired programme

[a] the current position
[b] the INDEX number

Обнаружение желаемой отмеченной позиции Индексный поиск

(1) Нажмите INDEX на пульте дистанционного управления в режиме останова или воспроизведения
(2) Нажимайте INDEX повторно до тех пор, пока индексный номер желаемой программы не отобразится в видоискателе или на экране ЖКД
(3) Нажмите ◀◀ или ▶▶ Воспроизведение начинается с начала желаемой программы

[a] Текущее положение
[b] Индексный номер INDEX



To stop index search mode
Press ▶ Normal playback resumes

Note on the index number
The index number (1, 2, etc) indicates the distance from the point you are now viewing [a], regardless of the direction

Для прекращения режима индексного поиска
Нажмите ▶ Нормальное воспроизведение будет восстановлено

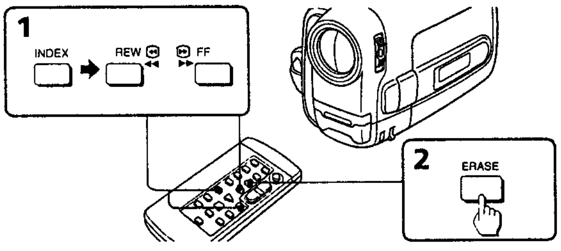
Примечание к индексному номеру
индексный номер (1, 2 и т д) указывает отдаленность от места, которое Вы просматриваете в текущий момент [a] независимо от направления

Erasing an index signal

(1) Locate the index signal to be erased using the index scan or index search function
(2) Press ERASE on the Remote Commander within 2 to 10 seconds while the desired programme plays back After the index signal is erased, the camcorder returns to index scan when you used index scan in step 1 When you used index search, normal playback resumes

Стирание индексного сигнала

(1) Найдите индексныи сигнал, подлежащии стиранию с использованием функции индексного сканирования или индексного поиска
(2) Нажмите ERASE на пульте дистанционного управления в пределах от 2 до 10 секунд во время воспроизведения желаемой программы После стирания индексного сигнала видеокамера возвращается к режиму индексного сканирования, если Вы использовали индексное сканирование в пункте 1 Если Вы использовали индексный поиск, возобновится нормальное воспроизведение



Notes on erasing
- Press ERASE more than 2 seconds after the playback of the desired programme begins
- You cannot erase the index signal on a tape with the red mark on the cassette exposed
- While the index signal is being erased, the sound cannot be heard and a black band appears at the bottom of the picture This will not affect the recorded sound or picture
- The camcorder can detect index signals marked with VCRs, but may not erase them VCRs with an index function can detect index signals marked with this camcorder but may not erase them
- An index signal may be erased when making PCM after recording on another VCR in the portion where the index signal is marked

Note on Data Code
When an index signal is erased, the Data Code on the same portion of the tape is also erased

Примечания к стиранию
- Нажмите ERASE более, чем на 2 секунды после начала воспроизведения желаемой программы
- Вы не можете стереть индексный сигнал с ленты на которой выставлена красная метка
- Во время стирания индексного сигнала звук слышен не будет, и черная полоса появляется внизу изображения Это не будет влиять на записанные звук и изображение
- Видеокамера может детектировать индексные сигналы, записанные с помощью КВМ, но не может их стереть КВМ с индексной функцией может детектировать сигналы, записанные с помощью данной видеокамеры но не может их стереть
- Индексный сигнал может быть стерт при выполнении PCM после записи на другом КВМ в части, где индексный сигнал был записан

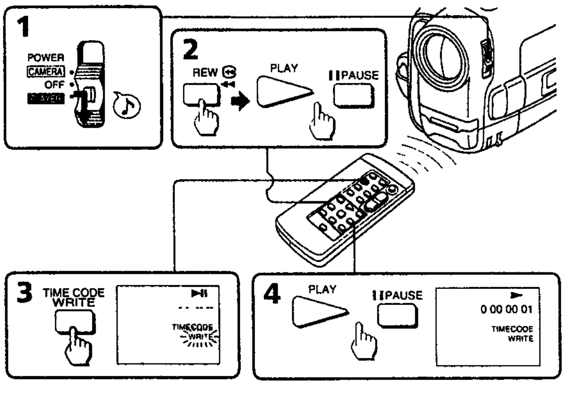
Примечание к коду данных
При стирании индексного сигнала код данных для той же части ленты также будет стерт

Writing the RC Time code on a recorded tape

You can write the RC time code on a recorded tape Use the Remote Commander
Before you begin, we recommend to set COUNTER to TIME CODE in the menu system so that you can view the RC time code
(1) While pressing the small green button on the POWER switch, set it to PLAYER
(2) Rewind the tape to the beginning and set the camcorder to playback pause mode
(3) Press TIME CODE WRITE on the Remote Commander The TIME CODE WRITE indicator appears in the viewfinder or on the LCD screen with the WRITE indicator flashing
(4) Press ▶ or ❚❚ to start playback The WRITE indicator stops flashing and the RC time code writing starts from 0 00 00 00

Запись временного кода RC на записанной ленте

Вы можете записать временной код RC на записанную ленту Используйте пульт дистанционного управления
Перед началом мы рекомендуем установить COUNTER на TIME CODE в системе меню так, чтобы Вы могли смотреть временной код RC
(1) Нажимая маленькую заленую кнопку на выключателе POWER, установите его в положение PLAYER
(2) Перемотайте ленту назад на начало и установите видеокамеру на режим паузы воспроизведения
(3) Нажмите TIME CODE WRITE на пульте дистанционного управления Индикатор TIME CODE WRITE появится в видоискателе или на экране ЖКД с мигающим индикатором WRITE
(4) Нажмите ▶ или ❚❚ для начала воспроизведения Индикатор WHITE перестает мигать и запись временного кода RC начинается с 0 00 00 00



To stop writing the RC time code
Press ■ (or any video control button)

Для останова записи временного кода RC
Нажмите ■ (или любую кнопку видеорегулировки)

To write the RC time code from the end of the RC time code recorded portion
Rewind the tape to the portion on which the RC time code has been written and set the camcorder to playback pause mode Then follow steps 3 and 4 above The RC time code is written continuously

Notes on writing the RC time code
- The RC time code writing stops when
  - you press TIME CODE WRITE again before starting playback
  - you press INDEX or DATE SEARCH before starting playback
  - you change from playback mode to another mode
- When you are writing the RC time code from the middle of a tape without the time code written, writing starts several frames before the current picture
- If you write the RC time code on a recorded tape, the Data Code is erased
- You can mark the RC time code on a tape recorded both in LP mode and SP mode, the RC time code written in LP mode, however, may not be read correctly
- You cannot mark the RC time code on an NTSC-recorded tape
- You cannot mark the RC time code on a tape with the red mark on the cassette exposed
- A black band appears when you mark the RC time code during playback, and the sound cannot be heard This does not affect the picture and sound that are already recorded

Note on -- -- -- -- indicator
The -- -- -- -- indicator appears during playback if
- nothing is recorded
- the RC time code is unreadable because of the damage of the tape or because of the noise
- you recorded using another VCR without RC time code function

The -- -- -- -- indicator may also appear on the LCD screen during variable speed playback

Для записи временного кода RC от конца записанной части с временным кодом RC
Перемотайте ленту назад до части, на которой был записан временнои код RC и установите видеокамеру на режим паузы воспроизведения Затем следуйте вышеописанным пунктам 3 и 4 Временной код RC будет записан без перерыва

Примечания к записи временного кода RC
- Запись временного кода RC отменяется если
  - Вы нажимаете TIME CODE WRITE до начала воспроизведения
  - Вы нажимаете INDEX или DATE SEARCH до начала воспроизведения
  - Вы изменяете режим воспроизведения на другой
- Если Вы записывает временной код RC с середины ленты на которой не записан временной код, запись начнется на несколько кадров ранее текущего изображения
- Если Вы записывает временной код RC на записанную ленту, код данных будет стерт
- Вы можете нанести метку временного кода RC на ленту, записываемую как в режиме LP, так и в режиме SP однако временной код RC, записанный в режиме LP может быть считан неправильно
- Вы не можете записать временной код RC на ленту записанную в системе NTSC
- Вы не можете записать временной код RC на ленте, если на кассете выставлена красная метка
- Черная полоса появляется, если Вы записываете временной код RC во время воспроизведения, и звук не будет прослушиваться Это не влияет на изображение и звук, которые уже были записаны

Примечание к индикатору -- -- -- --
Индикатор -- -- - -- появляется во время воспроизведения, если
- Ничего не записано
- Временной код RC невозможно считать из-за поереждения ленты или из-за помех
- Вы призвели запись на другом КВМ без функции временного кода RC

Индикатор -- -- - -- также может появляться на экране ЖКД во время воспроизведения на различных скоростях

Editing onto another tape

You can create your own video programme by editing with any other ▣ 8 mm, Hi▣ Hi8, VHS VHS, SVHS S-VHS, VHS▣ VHSC, SVHS▣ S-VHSC or ▣ Betamax VCR that has video/audio inputs

Before editing

Connect the camcorder to the VCR using the supplied A/V connecting cable
Set the input selector on the VCR to LINE, if available

(1) While pressing the small green button on the POWER switch, set it to PLAYER
(2) Set EDIT to ON in the menu system

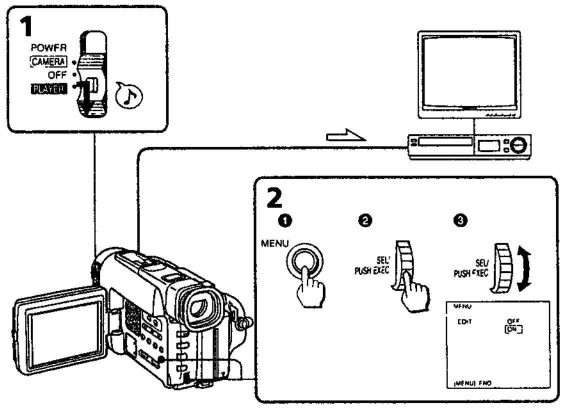
Монтаж на другую ленту

Вы можете создать Вашу собственную видеопрограмму путем монтажа с помощью другого КВМ типа ▣ 8 мм, Hi▣ Hi8 VHS VHS SVHS S-VHS, VHS▣ VHSC, SVHS▣ S-VHSC или ▣ Betamax, который имеет входы видео/аудио

Перед монтажем

Подсоедините видеокамеру к КВМ, используя прилагаемый соединительный кобель аудио/видео
Установите входной селектор на КВМ в положение LINE, если имеется в наличии

(1) Нажимая маленькую заленую кнопку на выключателе POWER , установите его в положение PLAYER
(2) Установите EDIT на ON в системе меню



Signal flow/ Передача сигнала

Starting editing

Turn down the volume of the camcorder while editing Otherwise picture distortion may occur

(1) Insert a blank tape (or a tape you want to record over) into the VCR and insert your recorded tape into the camcorder
(2) Play back the recorded tape on the camcorder until you locate the point where you want to start editing, then press **II** to set the camcorder in playback pause mode
(3) On the VCR, locate the recording start point and set the VCR in recording pause mode
(4) Press **II** on the camcorder and VCR simultaneously to start editing

To edit more scenes

Repeat steps 2 to 4

To stop editing

Press ☐ on both the camcorder and the VCR

Note on Fine Synchro Edit
If you connect a video deck that has the Fine Synchro Edit feature to the LANC ⏀ jack of the camcorder, using a LANC cable (not supplied), the edit will be even more precise

Начало монтажа

Уменьшите громкость видеокамеры во время монтажа В противном случае могут появиться искажения

(1) Вставьте чистую ленту (или ленту, которую Вы хотите перезаписать) в КВМ и Вставьте записанную ленту в видеокамеру
(2) Воспроизводите записанную ленту в видеокамере до тех пор, пока Вы не обнаружите точку, в которой Вы хотите начать монтаж, а затем нажмите **II** для введения видеокамеры в режим паузы воспроизведения
(3) Найдите на КВМ точку начала записи и введите КВМ в режим паузы записи
(4) Одновременно нажмите **II** на видеокамере и на КВМ для начала монтажа

Для монтажа других сцен

Повторите пункты со 2 по 4

Для останова монтажа

Нажмите ☐ и на видеокамере и на КВМ

Примечание к точному синхронному монтажу
Если Вы подсоедините видеодеку, которая имеет функцию точного синхронного монтажа, к гнезду LANC ⏀ видеокамеры с использованием кабеля LANC (не прилагается), то монтаж будет еще более точным

Additional Information

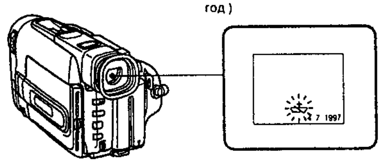
Changing the lithium battery in the camcorder

Your camcorder is supplied with a lithium battery installed When the battery becomes weak or dead, the ⚠ indicator flashes in the viewfinder for about 5 seconds when you set the POWER switch to CAMERA In this case, **replace the battery with a Sony CR2025 lithium battery Use of any other battery may present a risk of fire or explosion** Discard used batteries according to the manufacturer s instructions
The lithium battery for the camcorder lasts for about 1 year under normal operation (The lithium battery that comes installed at the factory may not last 1 year)

Дополнительная информация

Замена литиевой батарейки в видеокамере

Ваша видеокамера снабжена установленной литиевой батарейкой Если батарейка станет слабой или полностью разряженнои, индикатор ⚠ будет мигать в видоискателе в течение 5 секунд, когда Вы установите выключатель POWER в положение CAMERA **В этом случае замените батарейку на литиевую батарейку Sony CR2025 Использование какой-либо другой батарейки может привести к риску воспламенения или взрыва**
Использованные батарейки следует ликвидировать в соответствии с инструкциями завода-изготовителя
Срок службы литиевой батарейки для видеокамеры при нормальных условиях эксплуатации составляет около 1 года (Литиевой батарейки установленной на заводе-изготовителе может не хватить на 1 год)

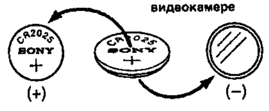


Notes on lithium battery

- **Keep the lithium battery out of the reach of children**
  Should the battery be swallowed, immediately consult a doctor
- Wipe the battery with a dry cloth to assure a good contact
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur
- Note that the lithium battery has a positive (+) and a negative (–) terminals as illustrated **Be sure to install the lithium battery so that terminals on the battery match the terminals on the camcorder.**

Примечания относительно литиевой батарейки

- **Храните литиевую батарейку в месте, не доступном для маленьких детей**
  Если кто-либо проглотил батарейку, немедленно обратитесь к доктору
- Протрите батарейку сухой тканью чтобы обеспечить хороший контакт
- Не берите батарейку с помощью металлического пинцета, в противном случае может произойти короткое замыкание
- Помните, что литиевая батарейка имеет положительный (+) и отрицательный (–) полюсы, как показано на рисунке **Не забудьте установить литиевую батарейку таким образом, чтобы полюсы на самой батарейке соответствовали полюсам на видеокамере**



WARNING
The battery may explode if mistreated Do not recharge, disassemble, or dispose of in fire

ПРЕДУПРЕЖДЕНИЕ
При неправильном обращении батарейка может взорваться Не перезаряжайте не разбирайте и не бросайте батарейку в огонь

Changing the lithium battery

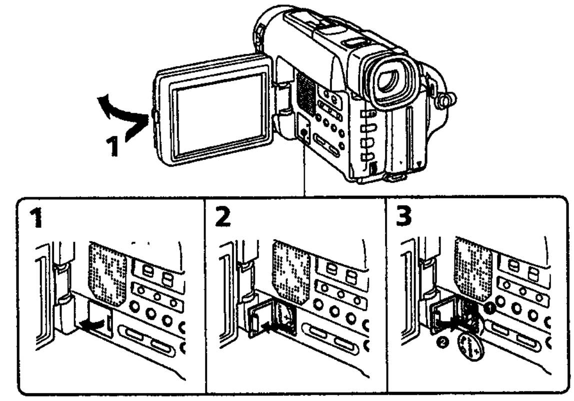
When replacing the lithium battery, keep the battery pack or other power source attached Otherwise, you will need to reset the date, time and other items in the menu system retained by the lithium battery

(1) Open the LCD panel and open the lid of the lithium battery compartment
(2) Push the lithium battery down once and pull it out from the holder
(3) Install the lithium battery with the positive (+) side facing out Close the lid

Замена литиевой батарейки

При замене литиевой батарейки оставьте батарейный блок или другой источник питания подсоединенным В противном случае Вам потребуется снова устанавливать дату, время и другие установки в системе меню, сохраняемые с помощью литиевой батарейки

(1) Откройте панель ЖКД и откройте крышку отсека литиевой батареики
(2) Нажмите литиевую батарейку один раз и вытащите ее из держателя
(3) Установите новую литиевую батарейку положительной (+) стороной, обращенной наружу Закройте крышку



Resetting the date and time

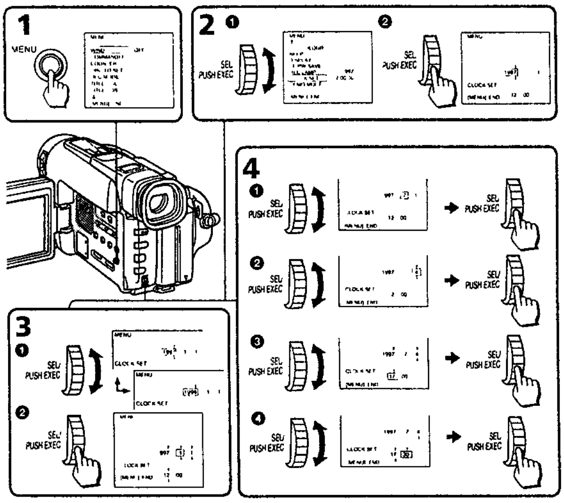
Установка даты и времени

You can reset the date and time in the menu system

(1) While the camcorder is in Standby mode, press MENU to display the menu
(2) Turn the control dial to select CLOCK SET, then press the dial
(3) Turn the control dial to adjust the desired year, then press the dial
(4) Set the month, day hour and minutes by turning the control dial and pressing the dial
(5) Press MENU to erase the menu display

Вы можете переустановить дату и время в системе меню

(1) В то время когда видеокамере находится в режиме готовности, нажмите кноку MENU для отображения меню
(2) Поверните регулировочный диск для выбора CLOCK SET, а затем нажмите диск
(3) Поверните регулировочный диск для выбора желаемого года, а затем нажмите диск
(4) Установите месяц, день час и минуты поворачивая регулировочный диск и нажимая диск
(5) Нажмите MENU для стирания отображения меню



To correct the date and time setting
Repeat the above procedure

Для исправления установки даты и времени
Повторите вышеописанную процедуру

To check the preset date and time
Press DATE to display the date indicator
Press TIME to display the time indicator
When you press the same button again the indicator goes off

The year changes as follows

1997 ↔ 1998 ← → 2029

Note on the time indicator
The internal clock of this camcorder operates on a 24-hour cycle

Для проверки предварительно установленных даты и времени
Нажмите DATE для отображения индикатора даты Нажмите TIME для отображения индикатора времени Если Вы нажмете ту же самую кнопку снова, индикатор исчезнет

Год изменяется следующим образом

1997 ↔ 1998 ← → 2029

Примечание к индикатору времени
Встроенные часы этой видеокамеры работают в 24-часовом цикле

Usable cassettes and playback modes

Используемые кассеты и режимы воспроизведения

Selecting cassette types

This Hi8 system is an extension of the standard 8 mm system, and was developed for higher-quality pictures
You can use Hi8 video and standard 8 mm cassettes When you use a Hi8 video cassette the recording is in the Hi8 system When you use a standard 8mm cassette the recording is in the standard 8 mm system You cannot record on standard 8 mm cassettes in the Hi8 system
If you are going to play back the tape using a standard 8mm video recorder/player, you should use standard 8 mm cassettes

Выбор типа кассеты

Данная система Hi8 охватывает стандартные 8-мм системы и разработана для создания высококачественных изображений
Вы можете использовать Hi8 и стандартные 8-мм видеокассеты Если Вы используете видеокассету Hi8 запись производится в системе Hi8 Если Вы используете стандартную 8-мм видеокассету запись производится в стандартной 8-мм системе
Вы не можете производить запись на стандартную 8-мм кассету в системе Hi8
Если Вы собираетесь воспроизводить ленту с использованием стандартного 8-мм видеомагнитофона/видеоплейера, Вы должны использовать стандартную 8-мм кассету

When you play back

The playback mode (SP/LP) and system (Hi8/standard 8 mm) are selected automatically according to the format in which the tape has been recorded The quality of the recorded picture in LP mode however, will not be as good as that in SP mode

Note on AFM HiFi stereo

When you play back a tape, the sound will be in monaural if

- You record the tape using this camcorder, then play it back on an AFM HiFi monaural video recorder/player
- You record the tape on an AFM HiFi monaural video recorder, then play it back on this camcorder

Foreign 8 mm video

Because the TV colour systems differ from country to country you may not be able to play back foreign pre-recorded tapes Refer to the list of Using your camcorder abroad ' to check the TV colour system of foreign countries

Playing back an NTSC-recorded tape
You can play back tapes recorded in the NTSC video system using the SP mode If the tape is recorded in the AFM HiFi system the AFM HiFi sound is reproduced However, note that the following will occur during playback of an NTSC-recorded tape

- When playing back a tape on a TV screen, you may not get the original colour depending on the TV When you play back on a Multi System TV, set NTSC PB to the desired mode in the menu system
- You cannot play back a tape recorded in NTSC video system with LP mode neither on the LCD nor on a TV screen
- If a tape has portions recorded in PAL and NTSC video systems, the tape counter reading is not correct This discrepancy is due to the difference between the counting cycle of the two video systems
- You cannot edit the NTSC-recorded tape onto another VCR

Режимы воспроизведения

Режим воспроизведения (SP/LP или Hi8/8-мм стандарт) выбирается автоматически в соответствии с форматом, в котором была записана лента Однако, качество записанного изображения в режиме LP будет не такое хорошее как в режиме SP

Примечание к стереозвучанию AFM HiFi

При воспроизведении ленты звук будет монофоническим если

- Вы записали ленту с использованием данной видеокамеры, а затем воспроизводите ее на монофоническом видеомагнитофоне/видеоплейере AFM HiFi
- Вы записали ленту на монофоническом видеомагнитофоне/видеоплейере AFM HiFi, а затем воспроизводите ее на данной видеокамере

Иностранные 8-мм видеоленты

Так как системы цветного телевидения отличаются в зависимости от страны то может быть Вы не сможете воспроизводить иностранные предварительно записанные ленты Смотрите список в разделе Использование Вашей видеокамеры за границей' для проверки системы цветного телевидения иностранных государсте

Воспроизведение ленты, записанной в системе NTSC
Вы можете воспроизводить ленты записанные в видеосистеме NTSC с использованием режима SP Если лента записана в системе AFM HiFi, то будет воспроизводится звучание AFM HiFi Однако обратите внимание что следующее может случиться во время воспроизведения ленты, записанной в системе NTSC

- При воспроизвведении ленты на экране телевизора Вы можете не получить исходный цвет в зависимости от телевизора Если Вы воспроизводите ленту на мультисистемном телевизоре то установите NTSC PB на требуемый режим в системе меню
- Вы не можете воспроизвести ленту записанную в видеосистеме NTSC с использованием режима LP, ни на экране ЖКД ни на экране телевизора
- Если лента имеет части записанные в видеосистемах PAL и NTSC показания счетчика ленты будут неправильными Это расхождение происходит из-за различия расчетного времени двух видеосистем
- Вы не можете произвести монтаж ленты записанной в видеосистеме NTSC, на другой КВМ

Tips for using the battery pack

Советы по использованию батарейного блока

This section shows you how you can get the most out of your battery pack

Preparing the battery pack

Always carry additional batteries

Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned

Battery life is shorter in a cold environment

Battery efficiency is decreased, and the battery will be used up more quickly, if you are recording in a cold environment

To save battery power

Turn STANDBY down when not recording to save battery power
A smooth transition between scenes can be made even if recording is stopped and started again While you are positioning the subject, selecting an angle, or looking through the viewfinder lens or on the LCD screen, the lens moves automatically and the battery is used The battery is also used when a tape is inserted or removed

When to replace the battery pack

While you are using your camcorder, the remaining battery indicator decreases gradually as battery power is used up Remaining time in minutes appears

Данный раздел показывает Вам, как Вы можете получить наибольшую отдачу от Вашего батарейного блока

Подготовка батарейного блока

Всегда носите дополнительные батарейные блоки

Имейте достаточный заряд батарейного блока для выполнения съемки в 2 - 3 раза больше, чем Вы запланировали

Срок службы батарейного блока будет короче в холодных условиях

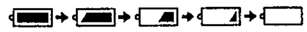
Эффективность батарейного блока понижается и заряд будет израсходован быстрее, если Вы производите запись в холодных условиях

Для экономии заряда батарейного блока

Поверните STANDBY вниз когда Вы не производите запись для экономии заряда батарейного блока
Плавный переход между сценами может быть выполнен, даже если запись была остановлена и начата снова Когда Вы позиционируете объект выбираете угол или смотрите через объектив видоискателя или на экран ЖКД объектив перемещается автоматически, и батарейный блок будет использоваться Батарейный блок также используется при вставке и удалении ленты

Когда заменять батарейный блок

Когда Вы используете видеокамеру, индикатор оставшегося заряда батарейного блока постепенно уменьшается по мере расхода заряда батарейного блока Появится оставшееся время в минутах



When the remaining battery indicator reaches the lowest point, the ▭ indicator may appear and start flashing in the viewfinder or on the LCD screen
When the ▭ indicator changes from slow flashing to rapid flashing while you are recording, set the POWER switch to OFF on the camcorder and replace the battery pack Leave the tape in the camcorder to obtain a smooth transition between scenes after the battery pack has been replaced

Когда индикатор оставшегося заряда батарейного блока достигнет нижайшей точки, в видоискателе или на экране ЖКД может появиться и начать мигать индикатор ▭
Если во время записи медленное мигание индикатора ▭ сменится на быстрое, установите переключатель POWER на видеокамере в положение OFF и замените батарейный блок Оставьте ленту в видеокамере для получения плавного перехода между эпизодами после замены батарейного блока

Notes on the rechargeable battery pack

Caution
Never leave the battery pack in temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight

The battery pack heats up
During charging or recording, the battery pack heats up This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack This is not cause for concern and is normal

Battery pack care
- **Remove the battery pack form the camcorder after using it,** and keep it in a cool place When the battery pack is installed to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF This shortens battery life
- The battery pack is always discharging even when it is not in use after charging Therefore, you should charge the battery pack right before using the camcorder

The switch on the battery pack
This switch is provided so that you can mark the charged battery pack Set the switch to the green mark' position when charging is completed (When removed from the charging adaptor the switch exposes the green mark When removed from your camcorder, no mark is indicated)

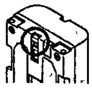
Примечание относительно перезаряжаемого батарейного блока

Предостережение
Никогда не оставляйте батарейный блок при температуре выше 60°C (140°F), как например, в автомобиле, припаркованном на солнце или под прямыми солнечными лучами

Батарейный блок нагревается
Во время зарядки или записи батарейный блок будет нагреваться Это вызвано генерируемой энергией и химическими изменениями, которые происходят внутри батарейного блока Это не должно быть причиной для беспокойства и является нормальным

Уход за батарейным блоком
- **Снять батарейный блок с видеокамеры после использования** и хранить его в прохладном месте Если батарейный блок установлен на видеокамере небольшое количество электрического тока поступает на видеокамеру, даже если выключатель POWER установлен в положение OFF Это сокращает срок службы батарейного блока
- Батарейный блок всегда разряжается даже, если он не используется после зарядки Поэтому Вы должны заряжать батарейный блок непосредственно перед использованием видеокамеры

Переключатель на батарейном блоке
Данный переключатель предназначен для того, чтобы Вы могли пометить заряженный батарейный блок Установите переключатель в положение ' зеленой метки", когда зарядка завершена (После снятия с зарядного адаптера, выключатель показывает зеленую метку После снятия с Вашей видеокамеры никакой метки показано не будет)



The life of the battery pack
If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one

Charging temperature
You should charge batteries at temperatures from 10°C to 30°C (from 50°F to 86°F) Lower temperatures require a longer charging time

Notes on the "InfoLITHIUM" battery pack

What is "InfoLITHIUM"
The InfoLITHIUM is a lithium ion battery pack which can exchange data with compatible video equipment about its battery consumption Sony recommends that you use the ' InfoLITHIUM" battery pack with video equipment having the ⓘInfoLITHIUM mark
When you use this battery pack with video equipment having the ⓘInfoLITHIUM mark, the video equipment will indicate the remaining battery time in minutes* However, if you use it with video equipment not having this mark, the remaining battery capacity will not be indicated in minutes

* The indication may not be accurate depending on the condition and environment which the equipment is used under

How the battery consumption is displayed
The power consumption of the camcorder changes depending on its use, such as how the autofocusing is working
While checking the condition of the camcorder, the "InfoLITHIUM" battery pack measures the battery consumption and calculates the remaining battery power If the condition changed drastically, the remaining battery indication may suddenly decrease or increase by more than 2 minutes
Even if 5 to 10 minutes is indicated as the battery remaining time on the LCD screen or in the viewfinder, the ⌂ indicator may also flash under some condition

Срок службы батарейного блока
Если индикатор заряда батарейного блока быстро мигает сразу после включения видеокамеры с полностью заряженным батарейным блоком, батарейным блок должен быть заменен на новый, полностью заряженный

Температура зарядки
Вы должны заряжать батарейный блок при температуре от 10°C до 30°C (от 50°F до 86°F) При более низкой температуре требуется более длительное время зарядки

Примечания относительно батарейного блока "InfoLITHIUM"

Что такое "InfoLITHIUM"
"InfoLITHIUM" является литиево-инонным батарейным блоком, который может обмениваться данными с совместимой видеоаппаратурой относительно расхода заряда батарейного блока Sony рекомендует чтобы Вы использовали батарейный блок "InfoLITHIUM" с видеоаппаратурой, имеющей знак (ⓘInfoLITHIUM)
Когда Вы используете данный батарейный блок с видеоаппаратурой, имеющей знак (ⓘInfoLITHIUM), видеоаппаратура будет показывать оставшееся время заряда батарейного блока в минутах* Однако если Вы используете его с видеоаппаратурой, не имеющей данного знака, оставшаяся емкость заряда батареи не будет указываться в минутах

* Эта индикация может быть неточной в зависимости от состояния и окружающей обстановки, при которых была использована камера

Как отображается потребляемый заряд батарейного блока
Потребляемый видеокамерой заряд зависит от условий использования, например, от того, как работает фокусировка
При проверке состояния видеокамеры батарейный блок "InfoLITHIUM" измеряет потребляемый батарейным блоком заряд и вычисляет оставшийся заряд батарейного блока Если состояние существенно изменилось, индикация оставшегося заряда батарейного блока может внезапно уменьшиться или увеличиться более, чем на 2 минуты
Даже, если на экране ЖКД или в видоискателе индицируется время оставшегося заряда от 5 до 10 минут, индикатор ⌂ также может мигать при некоторых условиях

To obtain more accurate remaining battery indication
Set the camcorder to recording standby mode and point towards a stationary object Do not move the camcorder for 30 seconds or more
- If the indication seems incorrect, use up the battery pack and then recharge it fully (Full charge[1]) Note that if you have used the battery in a hot or cold environment for long time, or you have repeated charging many times, the battery pack may not be able to show the correct time even after being fully charged
- After you have used the "InfoLITHIUM" battery pack with an equipment not having the ⓘInfoLITHIUM mark, make sure that you use up the battery pack on the equipment having the ⓘInfoLITHIUM mark and then recharge fully

Why the remaining battery indication does not match the continuous recording time in the operation manual
The recording time is affected by the environmental temperature and conditions The recording time becomes very short in a cold environment The continuous recording time in the operation manual is measured under the condition of using a fully charged (or normal charged[2]) battery back in 25°C (77°F) As the environmental temperature and condition are different when you actually use the camcorder, the remaining battery time is not same as the continuous recording time in the operation manual

[1] Full charge Charging for about 1 hour after the CHARGE lamp of the AC power adaptor goes off

[2] Normal charge Charging just until the CHARGE lamp of the AC power adaptor goes off

Notes on charging

A brand-new battery pack
A brand-new battery pack is not charged Before using the battery pack, charge it completely

Recharge the battery pack whenever you like
You do not have to discharge it before recharging If you charged the battery pack fully but you did not use it for a long time, it becomes discharged Then recharge the battery pack before use

Для получения более точной индикации оставшегося заряда батарейного блока
Установите видеокамеру в режим готовности записи и направьте ее на неподвижный объект Не передвигайте видеокамеру 30 секунд или более
- Если индикация покажется Вам неточной, используйте до конца заряд батарейного блока и полностью перезарядите его (Полная зарядка[1]) Помните что если Вы использовали батарейный блок в холодном или жарком месте длительное время или же повторяли зарядку много раз, батарейныи блок может показывать не точное время даже после полной перезарядки
- После того как Вы использовали батарейный блок "InfoLITHIUM" с аппаратурой, в которой нет знака ⓘInfoLITHIUM, убедитесь что Вы использовали до конца заряд батарейного блока на аппаратуре со знаком ⓘInfoLITHIUM и затем полностью перезарядите его

Почему индикация оставшегося заряда батарейного блока не соответствует времени непрерывной записи в руководстве по эксплуатации
На время записи влияет температура и условия окружающей среды В холодной окружающей среде время записи становится очень коротким Время непрерывной записи, указанное в руководстве по эксплуатации измерено при условии использования полностью заряженного (или нормально заряженного[2]) батареиного блока при температуре 25°C Поскольку температура и условия окружающей среды при использовании видеокамеры являются несколько другими время оставшегося заряда не соответствует времени непрерывной записи указанному в руководстве по эксплуатации

[1] Полная зарядка Зарядка примерно 1 час после того как погаснет лампочка CHARGE на сетевом адаптере

[2] Нормальная зарядка Зарядка до момента, когда погаснет лампочка CHARGE на сетевом адаптере

Примечания к зарядке

Совершенно новый батарейный блок
Совершенно новый батарейный блок не заряжен Перед использованием батарейного блока его следует полностью зарядить

Перезаряжайте батарейный блок, когда Вы хотите
Вам не нужно разряжать батарейный блок перед его перезарядкой Если Вы полностью зарядили батарейный блок, но не использовали его в течение длительного времени, то он разрядится Поэтому заряжайте батареиный блок перед использованием

Notes on the terminals

If the terminals (metal parts on the back) are not clean, the battery charge duration will be shortened
When the terminals are not clean or when the battery pack has not been used for a long time repeatedly install and remove the battery pack a few times This improves the contact condition Also, wipe the + and – terminals with a soft cloth or paper

Be sure to observe the following
- Keep the battery pack away from fire
- Keep the battery pack dry
- Do not open nor try to disassemble the battery pack
- Do not expose the battery pack to any mechanical shock

Notes on the battery case

- **Use only with alkaline batteries You cannot use the battery case with manganese batteries or LR6 (size AA) rechargeable NiCd batteries**
- **Using with Sony alkaline batteries is preferable**
- Battery life is remarkably shorter in a cold environment (lower than 10°C/50°F)
- Keep the metal part clean If it gets dirty, wipe it with a soft cloth
- Do not disassemble or convert the battery case
- Do not expose the battery case to any mechanical shock
- During recording, the battery case heats up This is not cause for concern
- Prevent the electrode in the battery case from coming in contact with a metal object
- If you will not use the battery case for a long time, detach the battery case from the camcorder and remove the batteries from the battery case

Примечания к контактам

Если контакты (металлические части на задней стороне) загрязнены, продолжительность действия батарейного блока сократится
Если контакты загрязнены или если батарейный блок не использовался длительный период времени повторите установку и снятие батарейного блока несколько раз Это улучшает состояние контакта Протрите также контакты + и – с помощью мягкой ткани или бумаги

Обязательно соблюдайте следующее
- Храните батарейный блок вдали от огня
- Сохраняйте батарейный блок сухим
- Не открываите и не пытайтесь разобрать батарейный блок
- Не подвергайте батарейный блок никаким механическим ударам

Примечания относительно батарейного футляра

- **Используйте футляр только со щелочными батарейками Нельзя использовать футляр с марганцевыми батарейками или перезаряжаемыми никель-кадмиевыми батарейками LR6 (размера AA)**
- **Использование щелочных батареек фирмы Sony является предпочтительным**
- Срок службы батареек в холодной окружающей среде значительно короче (ниже 10°C)
- Содержите металлические части в чистом состоянии Если они загрязнились, протрите их мягкой тканью
- Не разбирайте и не преобразовуйте батарейный футляр
- Не подвергайте батарейный футляр воздействию механических ударов
- Во время записи батарейный блок нагревается Это не является причиной для беспокойства
- Не допускайте контакта электродов в батарейном футляре с металлическими предметами
- Если Вы не будете использовать батарейный футляр длительное время отсоедините его от видеокамеры и выньте батарейки из батарейного блока

Maintenance information and precautions

Moisture condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens In this condition, the tape may stick to the head drum and be damaged or the unit may not operate correctly To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors Please, take the following precautions

Inside the camcorder
If there is moisture inside the camcorder the beep sounds and the ▣ indicator flashes If this happens, none of the functions except cassette ejection will work Open the cassette compartment, turn off the camcorder and leave it about 1 hour When ⏏ indicator flashes at the same time, the cassette is inserted in the camcorder Eject the cassette, turn off the camcorder, and leave also the cassette about 1 hour The camcorder can be used again if the ▣ indicator does not appear when the power is turned on again

On the lens
If moisture condenses on the lens, no indicator appears, but the picture becomes dim Turn off the power and do not use the camcorder for about 1 hour

How to prevent moisture condensation
When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time

(1) Be sure to tightly seal the plastic bag containing the camcorder
(2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about 1 hour)

Информация по уходу за аппаратом и предосторожности

Конденсация влаги

Если видеокамера прямо принесена из холодного места в теплое то влага может сконденсироваться внутри видеокамеры, на поверхности ленты или на объективе В таком состоянии лента может пирлипнуть к барабану головки и будет повреждена, или же аппарат может работать неправильно Для предотвращения возможного повреждения ввиду таких обстоятельств, видеокамера снабжена датчиками влаги Соблюдайте пожалуйста следующие предосторожности

Внутри видеокамеры
Если внутри видеокамеры произошла конденсация влаги, то будет звучать зуммерныи сигнал и индикатор ▣ будет мигать Если это случилось, то никакие функции, кроме выталкивания кассеты не будут работать Откройте отсек кассеты, выключите видеокамеру и оставьте ее приблизительно на 1 час Если индикатор ⏏ мигает в то же самое время то значит кассета вставлена в видеокамеру Вытолкните кассету, выключите видеокамеру и оставьте кассету также приблизительно на час Видеокамеру можно использовать опять, если не появится индикатор ▣ при повторном включении питания

На объективе
Если влага сконденсировалась на объективе, никакие индикаторы появляться не будут но изображение сделается тусклым Выключите питание и не используйте видеокамеру приблизительно в течение 1 часа

Как предотвратить конденсацию влаги
Если видеокамера была принесена из холодного места в теплое то упаковать видеокамеру в полиэтиленовый пакет и дать ей адаптироваться к комнатным условиям в течение некоторого периода времени

(1) Обязательно плотно закрыть полиэтиленовый пакет содержащий видеокамеру
(2) Снимите пакет, когда температура воздуха внутри его достигнет температуры окружающего воздуха (приблизительно через 1 час)

Maintenance information and precautions

Video head cleaning

To ensure normal recording and clear pictures, clean the video heads When the ⊗ indicator and " CLEANING CASSETTE " message appear one after another or playback pictures are "noisy " or hardly visible, the video heads may be dirty

[a] Slightly dirty
[b] *Very dirty*

If this happens, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied) After checking the picture, if it is still "noisy," repeat the cleaning (Do not repeat cleaning more than 5 times in one session)

Caution
Do not use a commercially available wet-type cleaning cassette It may damage the video heads

Note
If the Sony V8-25CLH cleaning cassette is not available in your area, consult your nearest Sony dealer

Precautions

Camcorder operation
- Operate the camcorder on 7 2 V (battery pack) or 8 4 V (AC power adaptor)
- For DC or AC operation, use the accessories recommended in this manual
- Should any solid object or liquid get inside the casing, unplug the camcorder and have it checked by a Sony dealer before operating it any further
- Avoid rough handling or mechanical shock Be particularly careful of the lens

Информация по уходу за аппаратом и предосторожности

Очистка видеоголовок

Для обеспечения нормальной записи и четкого изображения очищайте видеоголовки Если индикатор ⊗ и сообщение " CLEANING CASSETTE" появляются один за другим, или воспроизводимое изображение будет "зашумленным" или трудно просматриваемым, видеоголовки наверное загрязнены

[а] Слегка загрязнены
[b] *Очень загрязнены*

Если это случится, то очистите видеоголовки с помощью очистительной кассеты Sony V8-25CLH (не прилагается) После проверки изображения, если оно все еще "зашумленно", повторите очистку (Не повторяйте очистку более 5 раз за один прием)

Предостережение
Не используйте имеющиеся в продаже очистительные кассеты влажного типа Они могут повредить видеоголовки

Примечание
Если очистительной кассеты Sony V8-25CLH нет в наличии в Вашей области обратитесь к Вашему ближайшему дилеру Sony

Предосторожности

Эксплуатация видеокамеры
- Эксплуатируйте видеокамеру от 7 2 В (батарейного блока) или 8,4 В (сетевого адаптера перем тока)
- Для эксплуатации от пост тока или перем тока используйте принадлежности, рекомендуемые в данном руководстве
- Если какой-либо твердый предмет или жидкость попали в корпус, отключите видеокамеру и проверьте ее у дилера Sony перед дальнейшей ее эксплуатацией
- Избегайте грубого обращения или механических ударов Будьте особенно осторожны с объективом

Maintenance information and precautions

- Keep the POWER switch set to OFF when not using the camcorder
- Do not wrap up the camcorder and operate it since heat may build up internally
- Keep the camcorder away from strong magnetic fields or mechanical vibration
- Do not push the LCD screen
- If the camcorder is used in a cold place, a residual image may appear on the LCD screen This is not a malfunction
- While using the camcorder, the back of the LCD screen may heat up This is not a malfunction

On handling tapes
Do not insert anything in the small holes on the rear of the cassette These holes are used to sense the type of tape thickness of tape and if the recording tab is in or out

Camcorder care
- When the camcorder is not to be used for a long time disconnect the power source and remove the tape Periodically turn on the power, operate the camera and player sections and play back a tape for about 3 minutes
- Clean the lens with a soft brush to remove dust If there are fingerprints on it, remove them with a soft cloth
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution Do not use any type of solvent which may damage the finish
- If fingerprints or debris make the LCD screen dirty, we recommend using a LCD Cleaning Kit (not supplied) to clean the LCD screen
- Do not let sand get into the camcorder When you use the camcorder on a sandy beach or in a dusty place, protect it from the sand or dust Sand or dust may cause the unit to malfunction, and sometimes this malfunction cannot be repaired

AC power adaptor
Charging
- Use only a lithium ion type battery pack
- Place the battery pack on a flat surface without vibration during charging
- The battery pack will get hot during charging This is normal

Информация по уходу за аппаратом и предосторожности

- Держите выключатель POWER в положении OFF, когда Вы не используете видеокамеру
- Не заворачивайте видеокамеру и не эксплуатируйте ее в таком состоянии, так как внутри может произойти повышение температуры
- Храните видеокамеру подальше от сильных магнитных полей или механической вибрации
- Не нажимайте на экран ЖКД
- Если видеокамера используется в холодном месте, то послеизображение может появится на экране ЖКД. Это не является неисправностью
- Во время использования видеокамеры тылная часть экрана ЖКД может нагреться Это не является неисправностью

Относительно обращения с лентами
Не вставляйте ничего в маленькие отверстия на задней стороне кассеты Эти отверстия используются для определения типа ленты толщины ленты и наличия лепестка записи

Уход за видеокамерой
- Если видеокамера не используется в течение длительного времени, отсоедините источник питания и удалите ленту Периодически включайте питание, работайте с секциями камеры и плейера и воспроизводите ленту приблизительно в течение 3-х минут
- Очищайте объектив с помощью мягкой щетки для удаления пыли Если на нем есть отпечатки пальцев, то удалите их с помощью мягкой ткани
- Очищайте корпус видеокамеры с помощью сухой мягкой ткани или мягкой ткани, слегка смоченной умеренным раствором моющего средства Не используйте каких-либо типов растворителей, которые могут повредить отделку
- Если отпечатки пальцев или мусор сделают экран ЖКД грязным, мы рекомендуем использовать очистительный набор для ЖКД (не прилагается) чтобы очистить экран ЖКД
- Не допускайте попадания песка в видеокамеру Если Вы используете видеокамеру на песчаном пляже или в пыльном месте, следует предохранять ее от песка или пыли Песок или пыль могут привести к неисправности аппарата, которая не всегда является исправимой

Сетевой адаптер перем тока
Зарядка
- Используйте только литиево-ионный тип батарейного блока
- Резместите батарейный блок на плоской поверхности без вибрации во время зарядки
- Батарейный блок будет нагреваться во время зарядки Это является нормальным

Maintenance information and precautions

Others
- Unplug the unit from the mains when not in use for a long time To disconnect the mains lead pull it out by the plug Never pull the mains lead itself
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged
- Do not bend the mains lead forcibly, or put a heavy object on it This will damage the cord and may cause a fire or electrical shock
- Be sure that nothing metallic comes into contact with the metal parts of the connecting plate If this happens, a short may occur and the unit may be damaged
- Always keep the metal contacts clean
- Do not disassemble the unit
- Do not apply mechanical shock or drop the unit
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation
- The unit becomes warm while in use This is normal
- Do not place the unit in locations that are
  - Extremely hot or cold
  - Dusty or dirty
    Very humid
  - Vibrating

Notes on dry batteries
To avoid possible damage from battery leakage or corrosion, observe the following
- Be sure to insert the batteries in the correct direction
- Dry batteries are not rechargeable
- Do not use a combination of new and old batteries
- Do not use different types of batteries
- The batteries slowly discharge while not in use
- Do not use a battery that is leaking

If battery leakage occurred
- Wipe off the liquid in the battery case carefully before replacing the batteries
- If you touch the liquid, wash it off with water
- If the liquid get into your eyes, wash your eyes with a lot of water and then consult a doctor

If any difficulty should arise, unplug the unit and contact your nearest Sony dealer

Информация по уходу за аппаратом и предосторожности

Прочее
- Отсоедините аппарат от электрической сети если он не используется в течение длительного времени Для отсоединения сетевого провода вытащите его за разъем Никогда не тяните за сам провод
- Не используйте аппарат с поврежденным проводом, или если аппарат упал или был поврежден
- Не сгибайте сетевой провод силои и не ставьте на него тяжелые предметы Это может повредить провод и может привести к пожару или удару электрическим током
- Убедитесь что никакие металлические предметы не соприкасаются с металлическими частями соединительной пластины Если это случится может произоити короткое замыкание и аппарат может быть поврежден
- Всегда держите металлические контакты в чистоте
- Не разбирайте аппарат
- Не подвергайте аппарат механическим ударам и не роняйте его
- Когда аппарат используется особенно во время зарядки, держите его подальше от радиоприемников АМ и видеоаппаратуры, потому что он будет нарушать прием АМ и работу видеоаппаратуры
- Аппарат становится теплым во время использования Это является нормальным
- Не располагайте аппарат в местах которые
  - Чрезвычайно горячие или холодные
  - Пыльные или грязные
  - *Очень влажные*
    Подвержены вибрации

Примечания относительно сухих батареек
Во избежание возможного повреждения вследствие утечки из батареек анутреннего вещества или коррозии следует соблюдать следующие меры предосторожности
- При установке батареек следите за *соблюдением полярности*
- Сухие батарейки нельзя перезаряжать
- Не используйте новые батарейки вместе со старыми
- Не используйте разные типы батареек
- Батарейки имеют свойство медленно разряжаться, если они не используются
- Не используите батарейки которые протекают

Если произошла утечка внутреннего вещества из батареек
- Перед тем, как заменить батарейки *тщательно протрите жидкость в батарейном футляре*
- В случае прикасания к жидкости промойте ее водой
- В случае попадания жидкости в глаза *промойте их большим количеством воды, а* затем обратитесь к врачу

В случае возникновения трудностей, отключите аппарат и обратитесь к Вашему ближайшему дилеру Sony

Using your camcorder abroad

Each country or area has its own electric and TV colour systems Before using your camcorder abroad, check the following points

Power sources

You can use your camcorder in any country or area with the supplied AC power adaptor within 110 V to 240 V AC, 50/60 Hz

Difference in colour systems

This camcorder is a PAL system based camcorder If you want to view the playback picture on a TV, it must be a PAL system based TV
Check the following list

PAL system
Australia, Austria, Belgium China, Denmark, Finland Germany, Great Britain, Holland, Hong Kong Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

NTSC system
Bahama Islands Bolivia Canada, Central America Chile Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U S A , Venezuela, etc

SECAM system
Bulgaria, Czech Republic, France, Guyana, Hungary Iran, Iraq, Monaco Poland, Russia Slovak Republic, Ukraine, etc

Использование Вашей видеокамеры за границей

Каждая страна или область имеет свои собственные системы электрическои сети и цветного телевидения Перед использованием Вашей видеокамеры за границей проверьте следующие пункты

Источники питания

Вы можете использовать Вашу камеру в любой стране или области с помощью прилагаемого сетевого адаптера перем тока в пределах от 110 В до 240 В перем тока, 50/60 ГЦ

Различия в системах цветного телевидения

Данная видеокамера основана на системе PAL Если Вы хотите просмотреть воспроизводимое изображение на телевизоре, то это должен быть телевизор основанный на системе PAL
Проверьте следующий список

Система PAL
Австралия, Австрия, Бельгия Великобритания Германия, Голландия Гонконг, Дания, Испания, Италия, Китай Кувейт, Малайзия, Новая Зеландия Норвегия, Португалия, Сингапур Таиланд, Финляндия, Швейцария, Швеция и т д

Система PAL-M
Бразилия

Система PAL-N
Аргентина, Парагвай Уругвай

Система NTSC
Багамские острова Боливия Венесуэла Канада, Колумбия, Корея Мексика Перу, Суринам США, Тайвань, Филиппины, Центральная Америка, Чили, Эквадор Ямайка, Япония и т д

Система SECAM
Болгария, Венгрия Гайана, Ирак, Иран, Монако, Польша, Россия, Словацкая Республика, Украина, Франция Чешская Республика и т д

English

Trouble check

If you run into any problem using the camcorder, use the following table to troubleshoot the problem Should the difficulty persist, disconnect the power source and contact your Sony dealer or local authorized Sony service facility

Camcorder

Power

Symptom	Cause and/or Corrective Action
The power is not on	• The battery pack is not installed → Install the battery pack (p 10) • The battery is dead → Use a charged battery pack (p 7) • The AC power adaptor is not connected to the mains → Connect the AC power adaptor to the mains (p 31)
The power goes off	• While being operated in CAMERA mode, the camcorder has been in Standby mode for more than 5 minutes → Turn STANDBY down once and then up again (p 12) • The battery is dead → Use a charged battery pack (p 7) • If VF PW-SAVE is set to ON, the picture disappears automatically when you turn your face away from the viewfinder → Bring your face close to the viewfinder within 1 cm (1/2 inch) Or set VF PW-SAVE to OFF (p 35)
The battery pack is quickly discharged	• The camcorder does not operate when using a battery pack that is not an "InfoLITHIUM" battery pack → Use an "InfoLITHIUM " battery pack (p 7) • The ambient temperature is too low (p 92) • The battery pack has not been charged fully → Charge the battery pack again (p 7) • The battery pack is completely dead, and cannot be recharged → Use another battery pack (p 93)

Operation

Symptom	Cause and/or Corrective Action
START/STOP does not operate	• The tape is stuck to the drum → Eject the tape (p 11) • The tape has run out → Rewind the tape or use a new one (p 25) • The POWER switch is set to PLAYER → Set it to CAMERA (p 12) • The tab on the cassette is out (red) → Use a new tape or slide the tab (p 11)
Recording stops in a few seconds	• The START/STOP MODE switch is set to 5SEC or ⊥ → Set it to ⊎ (p 17)

Trouble check

Symptom	Cause and/or Corrective Action
The cassette cannot be removed from the holder	• The battery is dead → Use a charged battery pack or the AC power adaptor (p 7 31)
▣ and ⏏ indicators flash and no function except for cassette ejection works	• Moisture condensation has occurred → Remove the cassette and leave the camcorder for at least 1 hour (p 97)
The date or time indicator is flashing	• You pressed DATE and TIME together for more than 2 seconds → The camcorder is not malfunctioning You may start recording Flashing will stop soon • The lithium battery is weak or dead → Replace the lithium battery with a new one (p 87)
The tape does not move when a video control button is pressed	• The POWER switch is set to CAMERA or OFF → Set it to PLAYER • The tape has run out → Rewind the tape or use a new one (p 25)
The Steady Shot function does not activate	• STEADY SHOT is set to OFF → Set STEADY SHOT to ON (p 63) • The Steady Shot function does not work when the wide mode is set to 16 9 FULL
The autofocusing function does not work	• FOCUS is set to MANUAL → Set it to AUTO (p 57) • Shooting conditions are not suitable for autofocus → Set FOCUS to MANUAL to focus manually (p 57)
The fader function does not work	• The START/STOP MODE switch is set to 5SEC or ⊥ → Set it to ⊎ (p 17) • A title is displayed → Stop superimposing the title (p 64)
No sound or only a low sound is heard when playing back a tape	• The stereo tape is played back with HiFi SOUND set to 1 or 2 in the menu system → Set to STEREO in the menu system (p 38)
Excessive high-pitched sound is heard	• The picture has been recorded with WIND set to ON in the menu system → When there is no wind, set it to OFF (p 36)
Data code becomes "-- -- -- '	• You are playing back a portion of tape on which you wrote or erased the index signal This is not a malfunction (p 79)
The date or time indicator disappears	• Reset the date and time (p 89)

Picture

Symptom	Cause and/or Corrective Action
The image on the viewfinder screen is not clear	• The viewfinder lens is not adjusted → Adjust the viewfinder lens (p 13)

(to be continued)

Trouble check

Symptom	Cause and/or Corrective Action
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background	• The contrast between the subject and background is too high The camcorder is not malfunctioning → Change locations
A vertical band appears when shooting a very bright subject	• The camcorder is not malfunctioning
The playback picture is not clear	• EDIT is set to ON in the menu system → Set it to OFF (p 38)
The picture is 'noisy '	• The video heads may be dirty → Clean the heads using the Sony V8-25CLH cleaning cassette (not supplied) (p 98)
The picture does not appear in the viewfinder	• The LCD panel is open → Close the LCD panel (p 19) • If VF PW-SAVE is set to ON the picture disappears automatically when you turn your face away from the viewfinder → Bring your face close to the viewfinder within 1 cm (1/2 inch) Or set VF PW-SAVE to OFF (p 35)
The picture in the viewfinder does not disappear even if VF PW-SAVE is set to ON	• Sunlight or an incandescent lamp may prevent the viewfinder sensor from working correctly This is not a malfunction
An unknown picture is displayed in the viewfinder or on the LCD screen	• If 10 minutes elapse after you set the POWER switch to CAMERA without inserting a cassette, the camcorder automatically starts the demonstration → Insert the cassette and the demonstration stops You can deactivate the demonstration (p 37)
The picture does not appear on the LCD screen	• Incorporated fluorescent tube is worn out → Please contact your nearest Sony dealer
The five digit code appears	• The self-diagnosis function is activated → Check the code and solve the problem (p 106)

Others

Symptom	Cause and/or Corrective Action
The supplied Remote Commander does not work	• COMMANDER is set to OFF in the menu system → Set it to ON (p 35) • Something is blocking the infrared rays → Remove the obstacle • The batteries are not inserted with the correct polarity → Insert the batteries with the correct polarity (p 119) • The batteries are dead → Insert new ones (p 119)
The picture from a TV or VCR does not appear even when the camcorder is connected to outputs on the TV or VCR	• DISPLAY is set to V-OUT/LCD in the menu system → Set it to LCD (p 35)

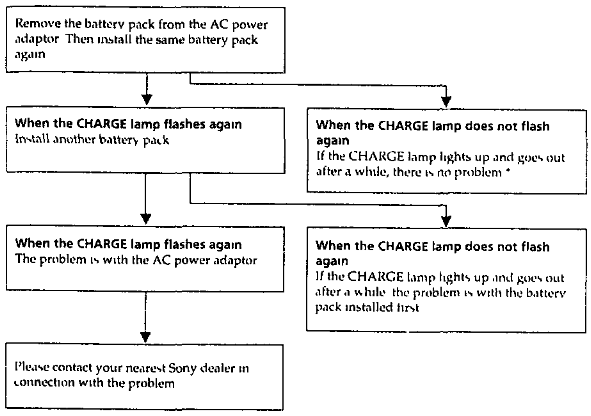
Trouble check

AC power adaptor

Symptom	Corrective Actions
The VTR/CAMERA or CHARGE lamp does not light	• Disconnect the mains lead After about 1 minute, reconnect the mains lead
The CHARGE lamp flashes	• See the following chart

When the CHARGE lamp flashes

Check through the following chart


Remove the battery pack from the AC power adaptor Then install the same battery pack again

When the CHARGE lamp flashes again
Install another battery pack

When the CHARGE lamp does not flash again
If the CHARGE lamp lights up and goes out after a while, there is no problem *

When the CHARGE lamp flashes again
The problem is with the AC power adaptor

When the CHARGE lamp does not flash again
If the CHARGE lamp lights up and goes out after a while the problem is with the battery pack installed first

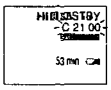
Please contact your nearest Sony dealer in connection with the problem

* If you use a battery pack which you have just bought or which has been left unused for a long time, the CHARGE lamp may flash at the first charging This does not indicate a problem Repeat again to charge with the same battery pack

Trouble check

Self-diagnosis function

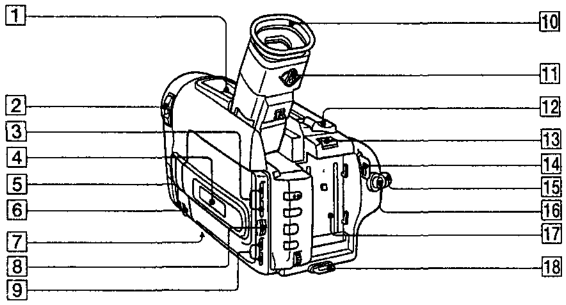
In the self-diagnosis function works to prevent the camcorder from malfunctioning, a five-digit service number (combination of a letter and figures) flashes in the viewfinder or on the LCD screen In this case, check the following table



First three digits	Cause and/or Corrective Action
C21	• Moisture condensation has occurred → Remove the cassette and leave the camcorder for at least 1 hour (p 97)
C22	• The video heads are dirty → Clean the heads using the Sony V8-25 CLH cleaning cassette (not supplied) (p 98)
C23	• The camcorder does not operate when using a battery pack that is not an "InfoLITHIUM" battery pack → Use an InfoLITHIUM battery pack (p 7)
C31	• To prevent the camcorder from malfunctioning, the self-diagnosis function has worked → Remove the cassette and insert it again then operate the camcorder (p 11)
C32	• To prevent the camcorder from operating malfunctioning, the self-diagnosis function has worked → Disconnect the mains lead of the AC power adaptor or remove the battery pack After reinstalling the power source, operate the camcorder
E61 E62	• To prevent the camcorder from malfunctioning, the self-diagnosis function has worked → When you contact your Sony dealer or local authorized Sony service facility, inform the service number with five digits (example E 61 10)

If a difficulty persists after checking the problem a few times contact your Sony dealer or local authorized Sony service facility

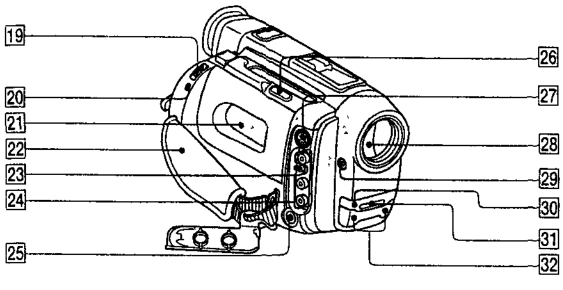
Identifying the parts Обозначения частей



1 **Intelligent accessory shoe** (p 116)
2 **POWER switch** (p 12)
3 **LCD BRIGHT buttons** (p 18)
4 **Display window** (p 121)
5 **NEAR/FAR dial** (p 57)
6 **FOCUS switch** (p 57)
7 **Tripod receptacle** (p 21)
Make sure that the length of the tripod screw is less than 6 5 mm (9/32 inch) otherwise, you cannot attach the tripod securely and the screw may damage the camcorder
8 **OPEN button** (p 17)
9 **VOLUME buttons** (p 25)
10 **Eyecup**
11 **Viewfinder lens adjustment lever** (p 13)
12 **Power zoom lever** (p 15)
13 **BATT RELEASE (PUSH) lever** (p 10)
14 **Hook for shoulder strap** (p 120)
15 **STANDBY switch** (p 12)
16 **START/STOP button** (p 12)
17 **Battery mounting surface**
18 **Hook for shoulder strap** (p 120)

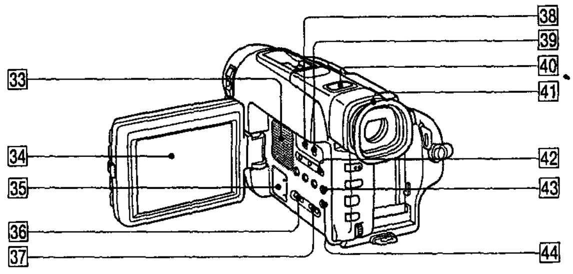
1 **Управляемый вывод для вспомогательного оборудования** (стр 116)
2 **Выключатель POWER** (стр 12)
3 **Кнопки LCD BRIGHT** (стр 18)
4 **Окошко дисплея** (стр 121)
5 **Диск NEAR/FAR** (стр 57)
6 **Переключатель FOCUS** (стр 57)
7 **Держатель треноги** (стр 21)
Убедитесь что длина винта треноги менее 6 5 мм или же в противном случае Вы не сможете надежно прикрепить треногу и винт может повредить видеокамеру
8 **Кнопка OPEN** (стр 17)
9 **Кнопки VOLUME** (стр 25)
10 **Окуляр**
11 **Рычаг регулировки объектива видоискателя** (стр 13)
12 **Рычаг приводного трансфокатора** (стр 15)
13 **Рычаг BATT RELEASE (PUSH)** (стр 10)
14 **Крючки дли плечевого ремня** (стр 120)
15 **Переключатель STANDBY** (стр 12)
16 **Кнопка START/STOP** (стр 12)
17 **Поверхность установки батарейного блока**
18 **Крючки для плечевого ремня** (стр 120)

Identifying the parts



19 **EJECT switch** (p 11)
20 **LANC ⓛ control jack**
ⓛ stands for Local Application Control Bus System The ⓛ control jack is used for controlling the tape transport of video equipment and peripherals connected to it This jack has the same function as the jack indicated as CONTROL L or REMOTE
21 **Cassette compartment** (p 11)
22 **Grip strap** (p 20)
23 **RFU DC OUT (RFU adaptor DC output) jack** (p 73)
24 **VIDEO/AUDIO jacks** (p 72)
25 **∩ (headphones) jack** (p 26)
26 **EDITSEARCH button** (p 23)
27 **S VIDEO jack** (p 72)
28 **Lens cover**
29 **MIC jack (PLUG IN POWER)**
Connect an external microphone (not supplied) This jack also accepts a 'plug-in-power' microphone
30 **Camera recording/battery lamp** (p 12)
31 **Remote sensor** (p 120)
Aim the Remote Commander here for remote control
32 **Microphone**

19 **Выключатель EJECT** (стр 11)
20 **Гнездо управления LANC ⓛ**
ⓛ означает систему канала местного управления Гнездо управления ⓛ используется для контроля за перемещением ленты видеоборудования и периферийных устройств, подключенных к нему Данное гнездо имеет такую же функцию как и разъемы обозначенные как CONTROL L или REMOTE
21 **Отсек кассеты** (стр 11)
22 **Ременной захват** (стр 20)
23 **Гнездо RFU DC OUT (выход адаптера перем тока RFU)** (стр 73)
24 **Гнезда VIDEO/AUDIO** (стр 72)
25 **Гнездо ∩ (головных телефонов)** (стр 26)
26 **Кнопка EDITSEARCH** (стр 23)
27 **Гнездо S VIDEO** (стр 72)
28 **Крышка объектива**
29 **Гнездо MIC (PLUG IN POWER)**
Подсоедините внешнии микрофон (не прилагается) К этому гнезду также можно подключать микрофон с 'выключателем питания"
30 **Лампочка записи видеокамерой/батарейного блока** (стр 12)
31 **Датчик дистанционного управления** (стр 120)
Направляйте пульт дистанционного управления видеокамерой в это место
32 **Микрофон**



33 **Speaker** (p 24)

34 **LCD screen** (p 18)

35 **Lithium battery compartment** (p 88)

36 **DIGITAL EFFECT button** (p 49)

37 **PICTURE EFFECT button** (p 47)

38 **STEADY SHOT switch** (p 63)

39 **START/STOP MODE switch** (p 17)

40 **Lighting aperture**

41 **Viewfinder** (p 13)

42 **COUNTER RESET button** (p 14)

43 **END SEARCH button** (p 24)

44 **MENU button** (p 34)

Note on the intelligent accessory shoe
Supplies power to optional accessories such as a video light or microphone The intelligent accessory shoe is linked to the STANDBY switch allowing you to turn on and off the power supplied by the shoe Refer to the instruction manual of the accessory for further information To connect an accessory, press down and push it to the end, and then tighten the screw To remove an accessory, loosen the screw, and then press down and pull out the accessory

33 **Громкоговоритель** (стр 24)

34 **Экран ЖКД** (стр 18)

35 **Отсек литиевой батарейкий** (стр 88)

36 **Кнопка DIGITAL EFFECT** (стр 49)

37 **Кнопка PICTURE EFFECT** (стр 47)

38 **Переключатель STEADY SHOT** (стр 63)

39 **Переключатель START/STOP MODE** (стр 17)

40 ***Световая апертура***

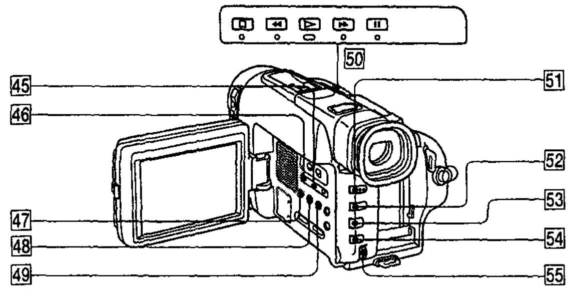
41 **Видоискатель** (стр 13)

42 ***Кнопка* COUNTER RESET** (*стр* 14)

43 **Кнопка END SEARCH** (стр 24)

44 ***Кнопка* MENU** (*стр* 34)

Примечание относительно держателя для установки принадлежностей
Служит для подвода питания к вспомогательным принадлежностям, как, например, видеолампа или микрофон Держатель для установки принадлежностей связан с переключателем STANDBY, который позволяет Вам включать и выключать питание, подводимое к держателю Для дальнейшей информации обратитесь к руководству по эксплуатации соответствующих принадлежностеи Для подсоединения какой-либо принадлежности нажмите ее до конца вниз и затяните винт Для снятия принадлежности ослабьте винт, а затем нажмите принадлежность вниз и *потяните ее*



45 **TIME button** (p 29, 70)

46 **DATE button** (p 29, 70)

47 **DISPLAY button** (p 26)

48 **TITLE button** (p 64)

49 **16 9 WIDE button** (p 44)

50 **Video control buttons** (p 25)
☐ STOP (stop)
◀◀ REW (rewind)
▷ PLAY (playback)
▶▶ FF (fastforward)
❚❚ PAUSE (pause)

51 **FADER button** (p 39)

52 **BACK LIGHT button** (p 60)

53 **PROGRAM AE button** (p 58)

54 **EXPOSURE button** (p 61)

55 **Control dial** (p 48)

45 **Кнопка TIME** (стр 29, 70)

46 **Кнопка DATE** (стр 29 70)

47 **Кнопка DISPLAY** (стр 26)

48 **Кнопка TITLE** (стр 64)

49 **Кнопка 16 9 WIDE** (стр 44)

50 **Кнопки видеорегулировки** (стр 25)
☐ STOP (останов)
◀◀ REW (ускоренная перемотка назад)
▷ PLAY (воспроизведение)
▶▶ FF (ускоренная перемотка вперед)
❚❚ PAUSE (пауза)

51 **Кнопка FADER** (стр 39)

52 **Кнопка BACK LIGHT** (стр 60)

53 **Кнопка PROGRAM AE** (стр 58)

54 **Кнопка EXPOSURE** (стр 61)

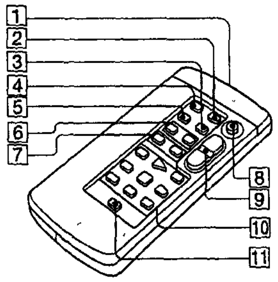
55 **Регулировочный диск** (стр 48)

Remote Commander

The buttons that have the same name on the Remote Commander as on the camcorder function identically

Пульт дистанционного управления

Кнопки, которые имеют одинаковое наименование с кнопками на видеокамере, функционируют идентично



1 **Transmitter**
Point toward the remote sensor to control the *camcorder after turning on the camcorder*

2 **ZERO MEM button** (p 69, 77)

3 **DATA CODE** ***button*** *(p 29)*

4 **COUNTER RESET button** (p 14)

5 ***TIME CODE WRITE button*** (p 83)

6 **INDEX buttons**
INDEX MARK button (p 78)
INDEX ERASE button (p 82)

7 **DATE SEARCH button** (p 75)
INDEX SEARCH button *(p 80)*

8 **START/STOP button** (p 12)

9 ***Power zoom button*** (p 15)

10 **Video control buttons** (p 25)

11 ***DISPLAY button*** (p 26)

1 **Передатчик**
Направьте в направлении дистанционного датчика для управления видеокамерой после включения видеокамеры

2 **Кнопка ZERO MEM** (стр 69, 77)

3 **Кнопка DATA CODE** (стр 29)

4 **Кнопка COUNTER RESET** (стр 14)

5 **Кнопка TIME CODE WRITE** (стр 83)

6 **Кнопки INDEX**
Кнопка INDEX MARK (стр 78)
Кнопка INDEX ERASE (стр 82)

7 **Кнопка DATE SEARCH** (стр 75)
Кнопка INDEX SEARCH (стр 80)

8 **Кнопка START/STOP** (стр 12)

9 **Кнопка приводного трансфокатора** (стр 15)

10 **Кнопки видеорегулировок** (стр 25)

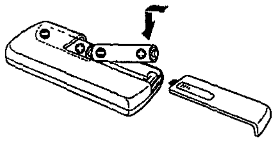
11 **Кнопка DISPLAY** (стр 26)

To prepare the Remote Commander

Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment

Для подготовки пульта дистанционного управления

Вставьте две батарейки R6 (размером AA), согласовывая + и - на батарейках с диаграммой внутри отсека батареек



Note on battery life
The batteries for the Remote Commander last about 6 months under normal operation When the batteries become weak or dead, the Remote Commander does not work

To avoid damage from possible battery leakage
Remove the batteries when you will not use the Remote Commander for a long time

To use the Remote Commander

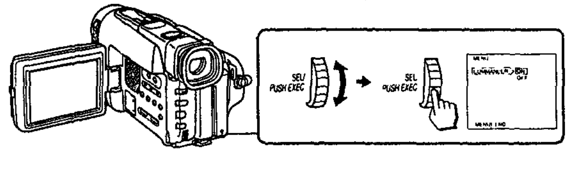
Make sure that the COMMANDER is set to ON in the menu system on the camcorder

Примечание к сроку службы батареек
Батареек для пульта дистанционного управления хватает приблизительно на 6 месяцев при нормальной эксплуатации Если батарейки станут слабыми или полностью разрядятся, пульт дистанционного управления не будет работать

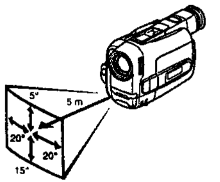
Во избежание повреждения из-за **возможной утечки из батареек**
Удалите батарейки если Вы не будете использовать пульт дистанционного управления в течение длительного времени

Для использоваиня пульта дистанционного управления

Убедитесь, что функция COMMANDER установлена на ON в системе меню видеокамеры



Remote control direction



Notes on the Remote Commander
- Keep the remote sensor away from strong light sources such as direct sunlight or illumination Otherwise, the remote control may not be effective
- Be sure that there is no obstacle between the remote sensor on the camcorder and the Remote Commander
- This camcorder works in commander mode VTR 2 The commander modes (1, 2 and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation If you use another Sony VCR in commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper

Attaching the shoulder strap

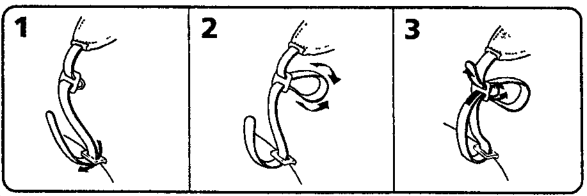
Attach the supplied shoulder strap to the hooks for the shoulder strap

Направление пульта дистанционного управления

Примечания к пульту дистанционного управления
- Держите дистанционный датчик подальше от сильных источников света как, например, прямые солнечные лучи или иллюминация В противном случае дистанционное управление может не действовать
- Убедитесь, что между дистанционным датчиком и пультом дистанционного управления нет препятствия
- Данная видеокамера работает в режиме пульта дистанционного управления VTR 2 Режимы пульта дистанционного управления (1, 2 и 3) используются для отличия данной видеокамеры от других КВМ фирмы Sony чтобы избежать неправильной работы при дистанционном управлении Если Вы используете другой КВМ фирмы Sony работающий в режиме VTR 2, мы рекомендуем Вам изменить режим пульта дистанционного управления или закрыть дистанционный датчик КВМ черной бумагой

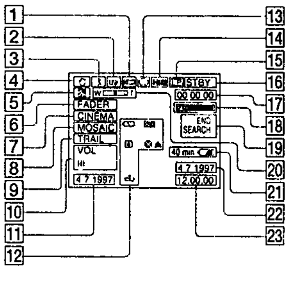
Прикрепление плечевого ремня

Прикрепите прилагаемый плечевой ремень к крючкам для плечевого ремня



Operation Indicators

Viewfinder/Видоискатель

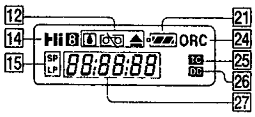


1. WIND indicator (p 36)
2. Manual focusing (p 56)
3. PROGRAM AE indicator (p 58)
4. Steady Shot indicator (p 63)
5. Backlight indicator (p 60)
6. FADER indicator (p 39)
7. Wide mode indicator (p 44)
8. PICTURE EFFECT indicator (p 47)
9. DIGITAL EFFECT indicator (p 49)
10. LCD BRIGHT indicator (p 17)/VOLUME indicator (p 25)
11. Data Code indicator (p 29)
12. Warning indicators (p 123)
13. Mirror mode indicator (p 19)
14. Playing back or recording in Hi8 format (p 90)
15. Recording mode indicator (p 14)
16. Video control mode (p 25)
17. Tape counter (p 14)/
    RC time code indicator/ (p 83)
    Self-diagnosis functions indicator (p 106)
18. Remaining tape indicator

    ▬ → ▬ → ▭ → 5min → 0min

Рабочие индикаторы

Display window/Окошко дисплея



1. Индикатор WIND (стр 36)
2. Ручная фокусировка (стр 56)
3. Индикатор PROGRAM AE (стр 58)
4. Индикатор устойчивой съемки (стр 63)
5. Индикатор задней подсветки (стр 60)
6. Индикатор FADER (стр 39)
7. Индикатор широкоформатного режима (стр 44)
8. Индикатор PICTURE EFFECT (стр 47)
9. Индикатор DIGITAL EFFECT (стр 49)
10. Индикатор LCD BRIGHT (стр 17)/ индикатор VOLUME (стр 25)
11. Индикатор кода данных (стр 29)
12. Предупреждающие индикаторы (стр 123)
13. Индикатор зеркального режима (стр 19)
14. Воспроизведение или запись в формате Hi8 (стр 90)
15. Индикатор режима записи (стр 14)
16. Режим видеорегулировок (стр 25)
17. Индикатор счетчика ленты (стр 14)/
    Индикатор кода времени (стр 83)/
    Индикатор функций самодиагностики (стр 111)
18. Индикатор оставшейся ленты

    ▬ → ▬ → ▭ → 5min → 0min

19. **Index indicator/Date search/Date scan indicator/ TIME CODE WRITE indicator / ZERO MEM indicator** (p 75, 78, 83)
    END SEARCH indicator (p 24)
    PHOTO mode indicator (p 46)
20. **Exposure indicator** (p 61)/**Zoom indicator** (p 15)
21. **Remaining battery indicator**

    ▮ → ▮ → ◢ → ◿ → ▭

22. **Date indicator** (p 70)
23. **Time indicator** (p 70)
24. **ORC indicator** (p 71)
25. **Time code indicator** (p 83)
26. **Data Code indicator** (p 29)
27. **Date or time indicator** (p 70)/
    Tape counter indicator (p 14)/
    RC time code indicator (p 83)/
    Self-diagnosis functions indicators (p 106)

To watch the demonstration

You can start the demonstration by setting DEMO MODE in the menu system
You can also start the demonstration by the following operation

To enter demo mode
(1) Eject the cassette and set the POWER switch to PLAYER
(2) Turn STANDBY up to STANDBY
(3) While holding down ▷ set the POWER switch to CAMERA

To exit demo mode
(1) Set the POWER switch to PLAYER
(2) Turn STANDBY up to STANDBY
(3) While holding down □ set the POWER switch to CAMERA

19. **Индикатор индекса/поиска даты/ сканирования дат/индикатор TIME CODE WRITE/Индикатор ZERO MEM** (стр 75, 78, 83)
    Индикатор END SEARCH (стр 24)
    Индикатор режима PHOTO (стр 46)
20. **Индикатор экспозиции** (стр 61)/
    Индикатор трансфокации (стр 15)
21. **Индикатор оставшегося заряда батарейного блока**

    ▮ → ▮ → ◢ → ◿ → ▭

22. **Индикатор даты** (стр 70)
23. **Индикатор времени** (стр 70)
24. **Индикатор ORC** (стр 71)
25. **Индикатор временного кода** (стр 83)
26. **Индикатор кода даты** (стр 29)
27. **Индикатор даты или времени** (стр 70)/
    Индикатор счетчика ленты (стр 14)/
    Индикатор кода времени (стр 83)/
    Индикатор функций самодиагностики (стр 111)

Для просмотра демонстрации

Вы можете начать демонстрацию путем установки DEMO MODE в системе меню Вы также можете начать демонстрацию с помощью следующей операции

Для входа в демонстрационный режим
(1) Извлеките кассету и установите переключатель POWER в положение PLAYER
(2) Поверните переключатель STANDBY в положение STANDBY
(3) Держа нажатой кнопку ▷ установите переключатель POWER в положение CAMERA

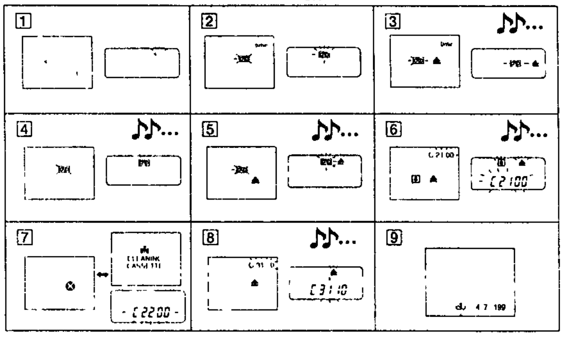
Для выхода из демонстрационного режима
(1) Установите переключатель POWER в положение PLAYER
(2) Поверните переключатель STANDBY в положение STANDBY
(3) Держа нажатой кнопку □, установите переключатель POWER в положение CAMERA

Warning indicators

Предупреждающие индикаторы

If indicators flash in the viewfinder or in the display window, check the following
♪ you can hear the beep sound when the BEEP is set to ON

Если индикаторы мигают в видоискателе или в окошке дисплея проверьте следующее
♪ Вы можете слышать зуммерный звуковой сигнал если функция BEEP установлена на ON



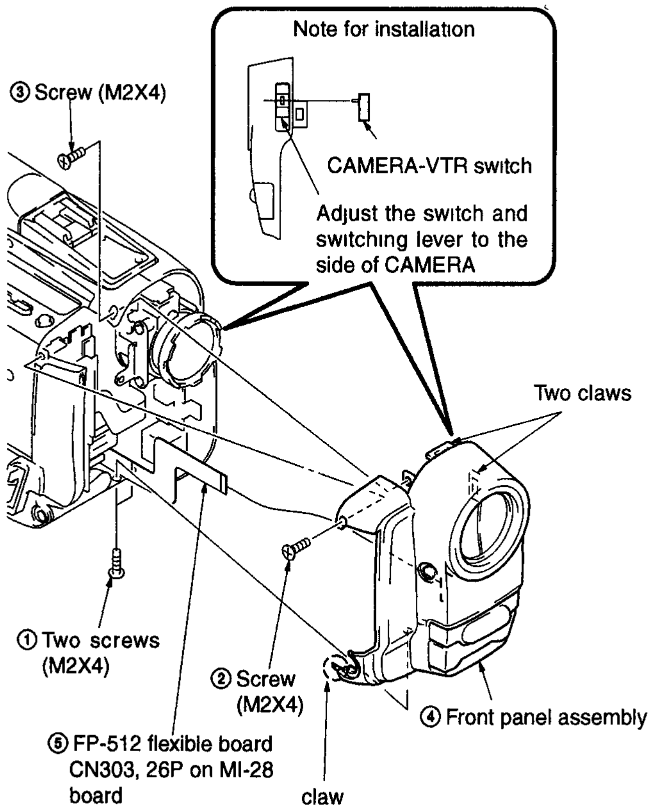
1. **The battery is weak or dead**
   Slow flashing The battery is weak
   Fast flashing The battery is dead
2. **The tape is near the end**
   The flashing is slow
3. **The tape has run out**
   The flashing becomes rapid
4. **No tape has been inserted**
5. **The tab on the tape is out (red)**
6. **Moisture condensation has occurred**
7. **The video heads may be contaminated**
8. **Some other trouble has occurred**
   Use the self-diagnosis function (p 106)
   If the display does not disappear contact your Sony dealer or local authorized Sony service facility
9. **The lithium battery is weak or is not installed**

1. **Батарейный блок слабый или полностью разряженный**
   Быстрое мигание батарейный блок полностью разряженный
2. **Лента приближается к концу**
   Медленное мигание
3. **Лента закончилась**
   Мигание становится быстрым
4. **Лента не вставлена**
5. **На кассете остутствует лепесток (красная метка)**
6. **Произошла конденсация влаги**
7. **Видеоголовки возможно загрязнены**
8. **Имеются какие-либо другие проблемы**
   Используйте функцию самодиагностики (стр 111)
   Если индикация не исчезает свяжитесь с Вашим дилером Sony или местным уполномоченным сервисным центром фирмы Sony
9. **Литиевая батарейка слабая или не установлена**

SECTION 2
DISASSEMBLY

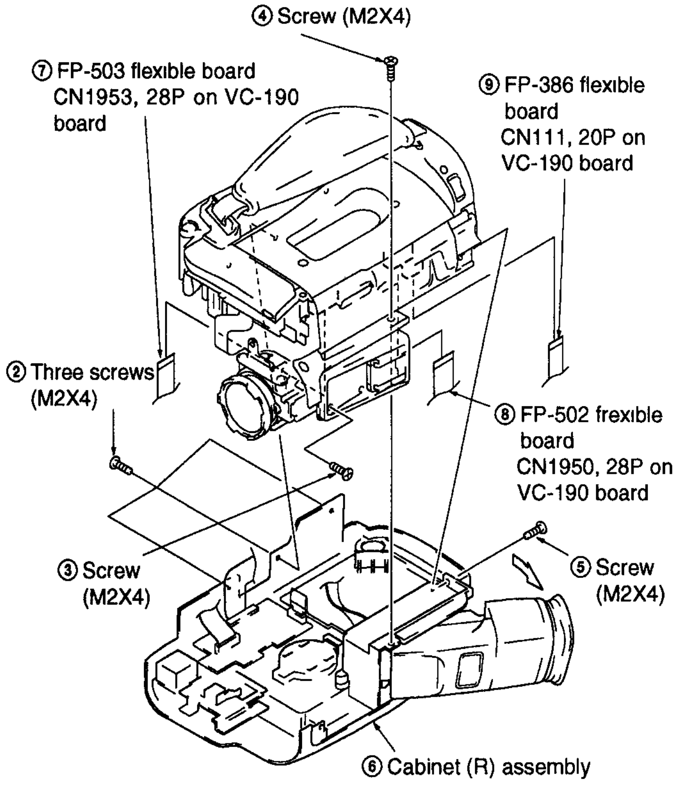
2-1. REMOVAL OF CCD-TRV54E/TRV56E/TRV62/TRV72/TRV82/TRV94/TRV94E

2-1-1. Removal of Front Panel Assembly


Note for installation
CAMERA-VTR switch
Adjust the switch and switching lever to the side of CAMERA
③ Screw (M2X4)
Two claws
① Two screws (M2X4)
② Screw (M2X4)
④ Front panel assembly
⑤ FP-512 flexible board CN303, 26P on MI-28 board
claw

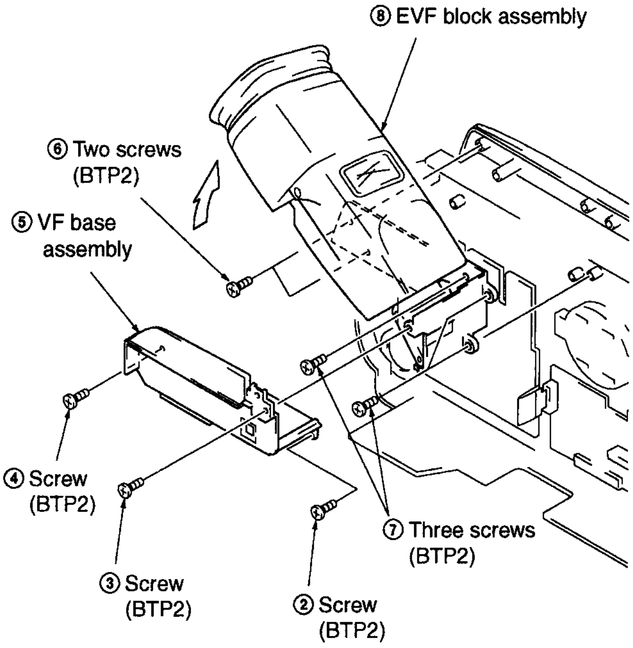
2-1-2. Removal of Cabinet (R) Assembly

① Tilt-up the EVF block assembly to the direction of arrow.


④ Screw (M2X4)
⑦ FP-503 flexible board CN1953, 28P on VC-190 board
⑨ FP-386 flexible board CN111, 20P on VC-190 board
② Three screws (M2X4)
⑧ FP-502 frexible board CN1950, 28P on VC-190 board
③ Screw (M2X4)
⑤ Screw (M2X4)
⑥ Cabinet (R) assembly

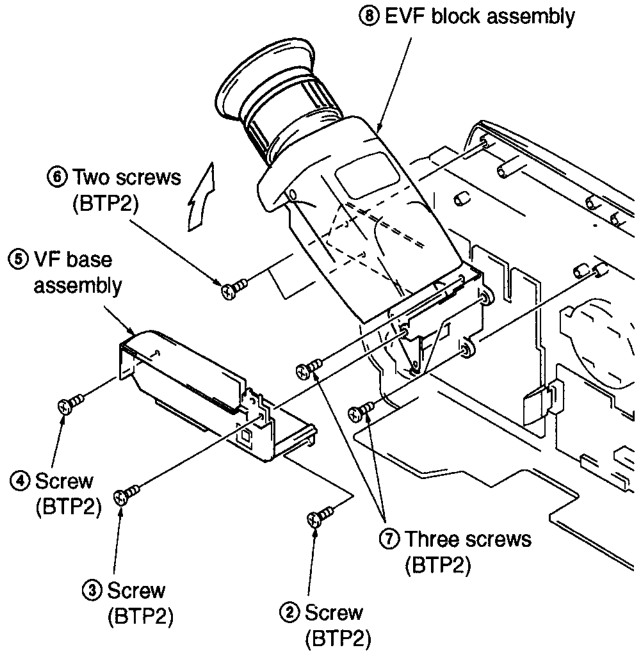
2-1-3. Removal of EVF Block Assembly (Color EVF)

① Tilt-up the EVF block assembly to the direction of arrow.

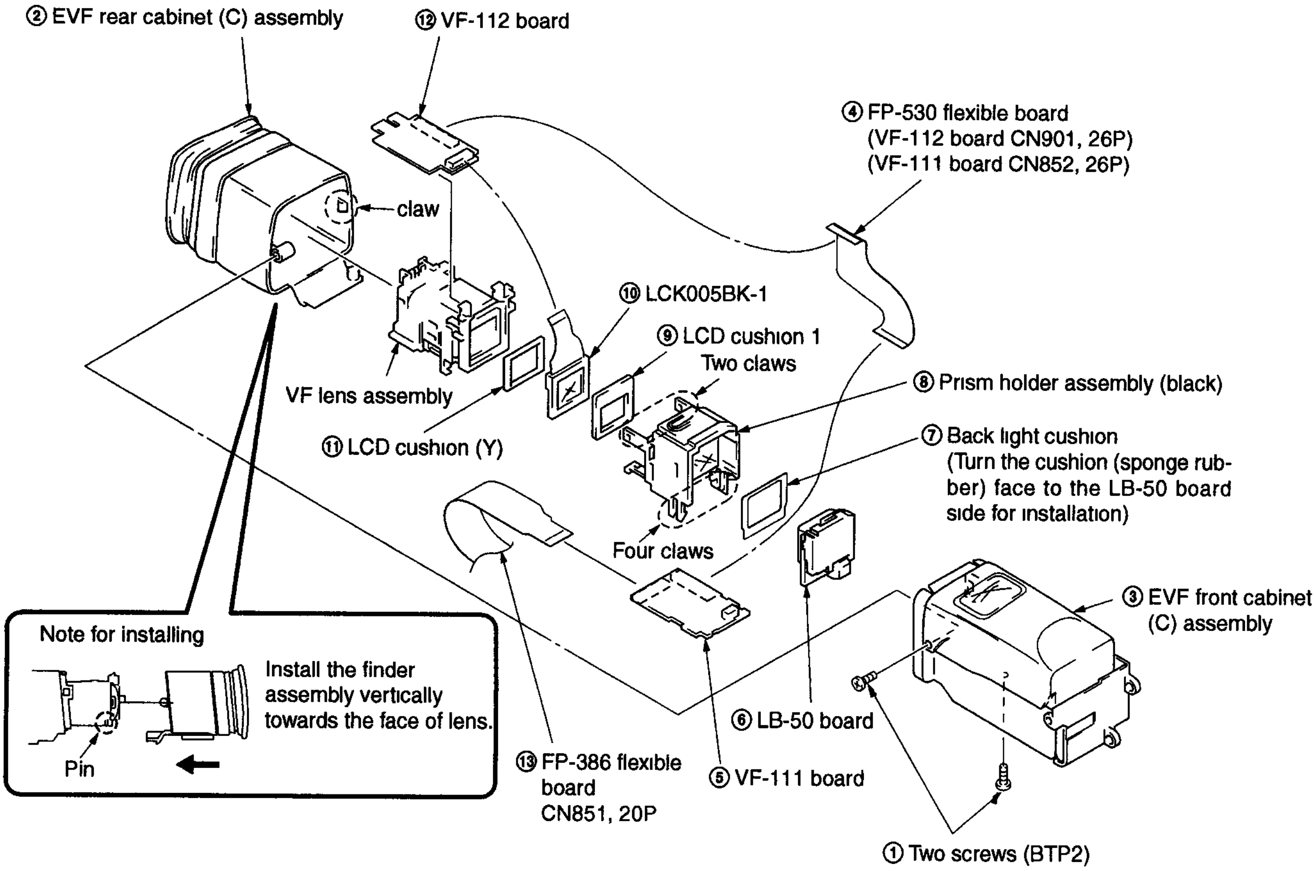

⑧ EVF block assembly
⑥ Two screws (BTP2)
⑤ VF base assembly
④ Screw (BTP2)
⑦ Three screws (BTP2)
③ Screw (BTP2)
② Screw (BTP2)

2-1-4. Removal of EVF Block Assembly (B/W EVF)

① Tilt-up the EVF block assembly to the direction of arrow.


⑧ EVF block assembly
⑥ Two screws (BTP2)
⑤ VF base assembly
④ Screw (BTP2)
⑦ Three screws (BTP2)
③ Screw (BTP2)
② Screw (BTP2)

2-1-5. Removal of EVF Block (Color EVF)

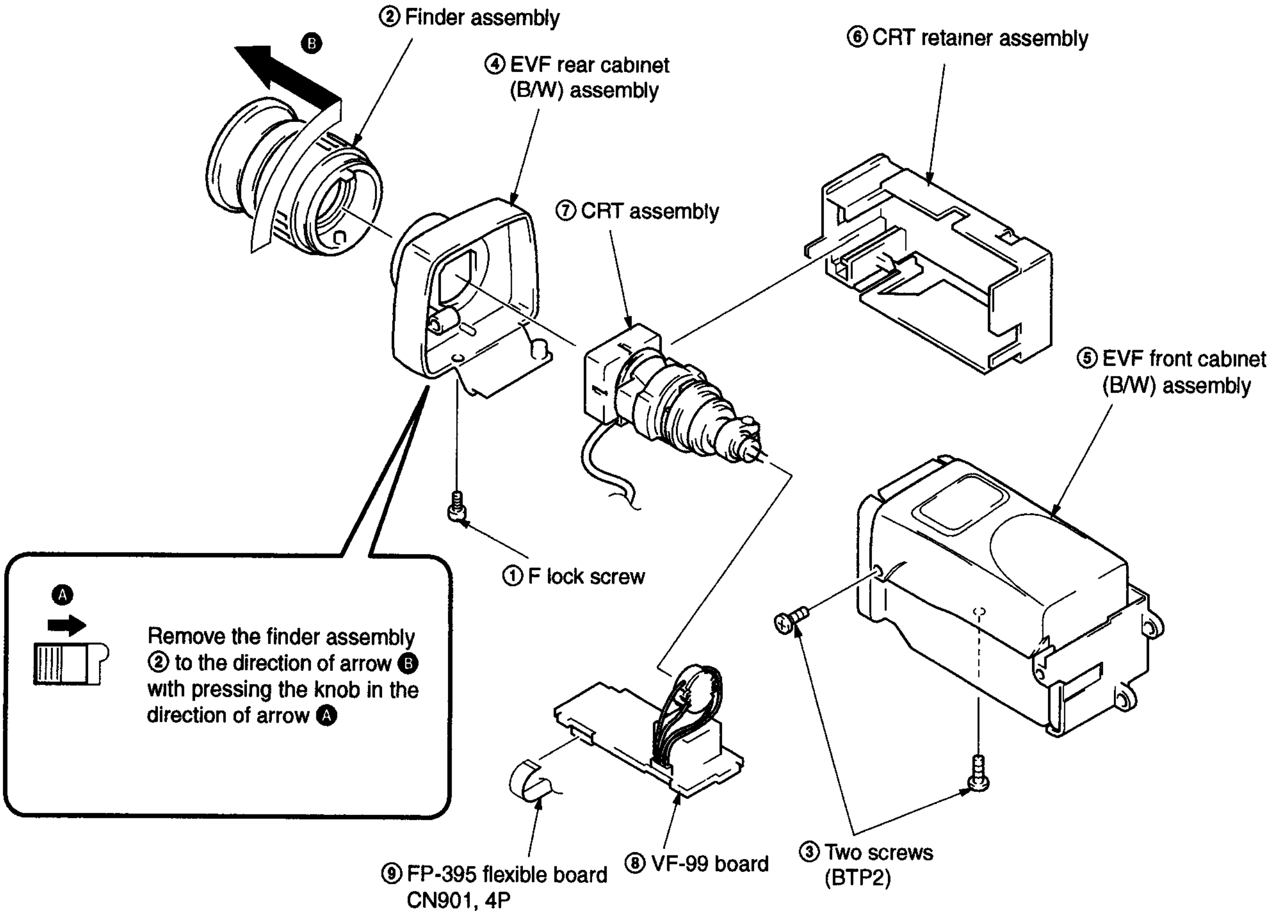

② EVF rear cabinet (C) assembly
⑫ VF-112 board
④ FP-530 flexible board
(VF-112 board CN901, 26P)
(VF-111 board CN852, 26P)
claw
⑩ LCK005BK-1
⑨ LCD cushion 1
Two claws
⑧ Prism holder assembly (black)
VF lens assembly
⑪ LCD cushion (Y)
⑦ Back light cushion
Four claws
③ EVF front cabinet
(C) assembly
Pin
⑥ LB-50 board
⑬ FP-386 flexible board
CN851, 20P
⑤ VF-111 board
① Two screws (BTP2)

Note for installing

Install the finder assembly vertically towards the face of lens.

(Turn the cushion (sponge rubber) face to the LB-50 board side for installation)

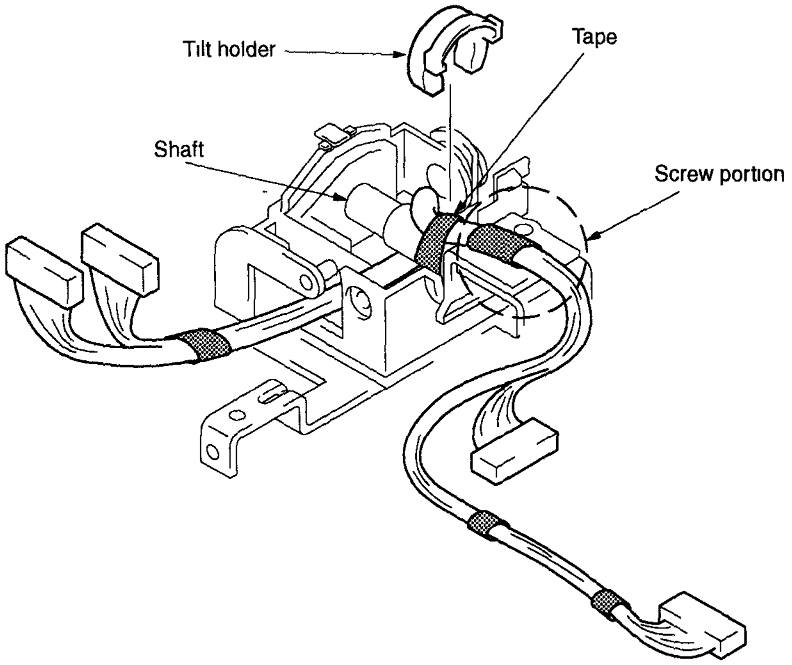
2-1-6. Removal of EVF Block (B/W EVF)


Ⓑ
② Finder assembly
④ EVF rear cabinet
(B/W) assembly
⑥ CRT retainer assembly
⑦ CRT assembly
⑤ EVF front cabinet
(B/W) assembly
① F lock screw
Ⓐ
⑨ FP-395 flexible board
CN901, 4P
⑧ VF-99 board
③ Two screws
(BTP2)

Remove the finder assembly ② to the direction of arrow Ⓑ with pressing the knob in the direction of arrow Ⓐ

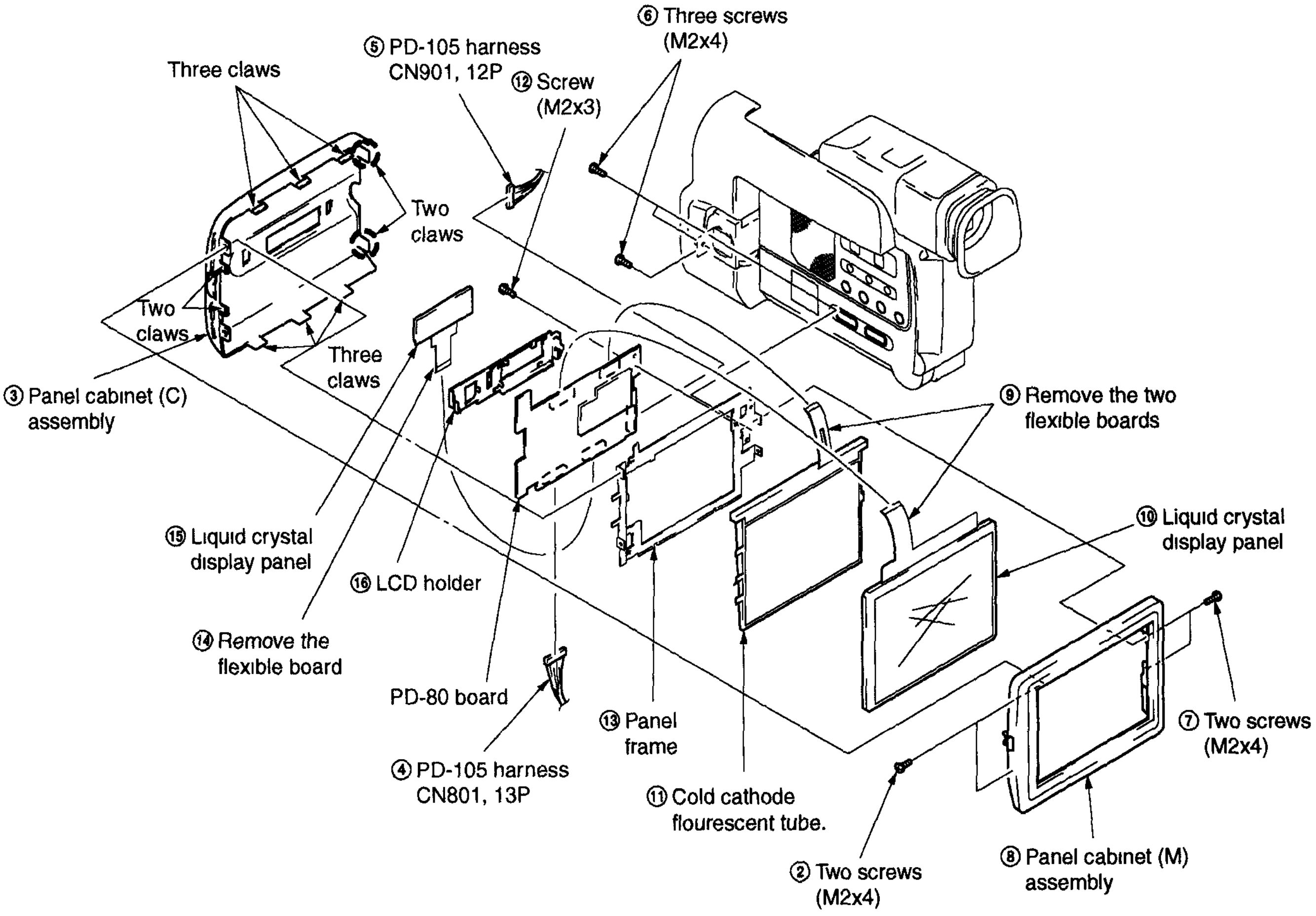
2-1-7. Attach the Harness of Hinge Section

① Pass the harness as if to wind it around the shaft.
② Tape the harness to the metal shaft with the tape binding the harness at the screw portion.
③ Attach the tilt holder (so that it is above the tape).

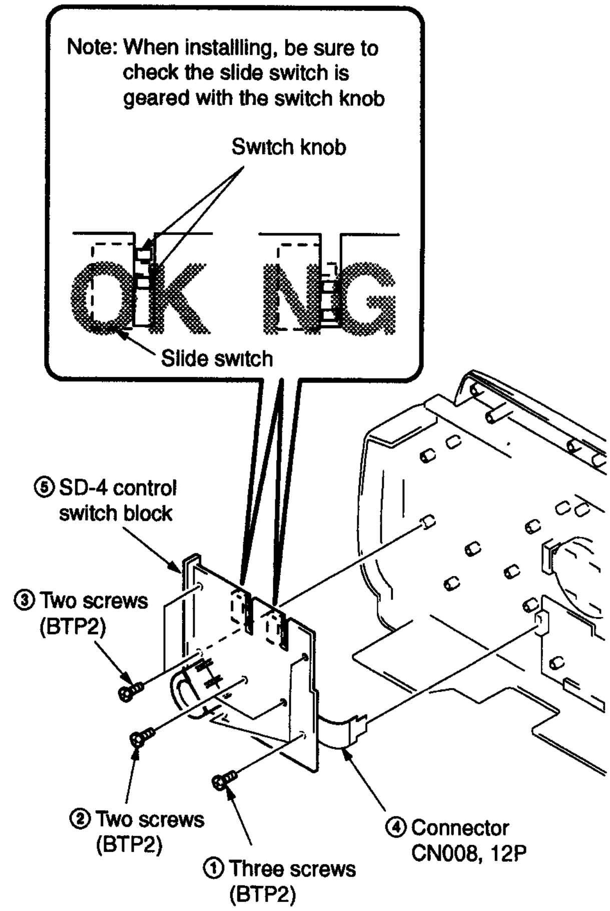

Tilt holder
Tape
Shaft
Screw portion

2-1-8. Removal of LCD Block

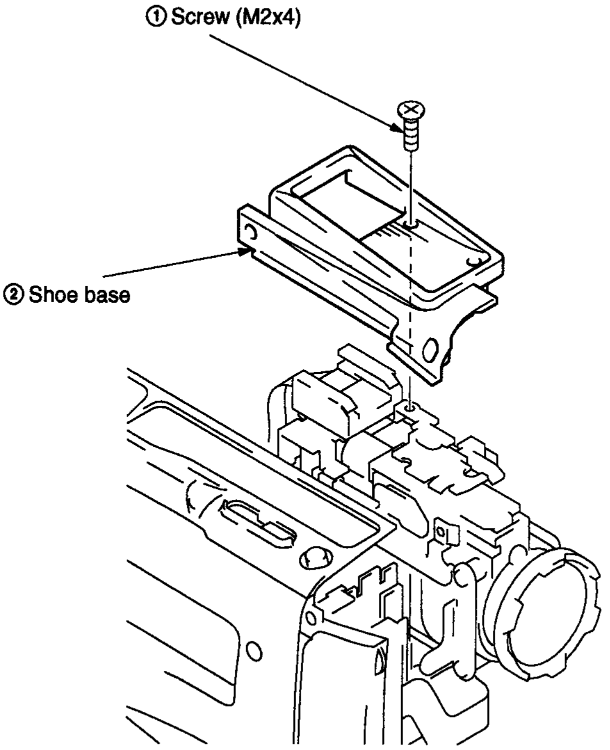
① Open the LCD panel


⑥ Three screws (M2x4)
⑤ PD-105 harness CN901, 12P
Three claws
⑫ Screw (M2x3)
Two claws
Two claws
Three claws
③ Panel cabinet (C) assembly
⑨ Remove the two flexible boards
⑩ Liquid crystal display panel
⑮ Liquid crystal display panel
⑯ LCD holder
⑭ Remove the flexible board
PD-80 board
⑬ Panel frame
⑦ Two screws (M2x4)
④ PD-105 harness CN801, 13P
⑪ Cold cathode flourescent tube.
② Two screws (M2x4)
⑧ Panel cabinet (M) assembly

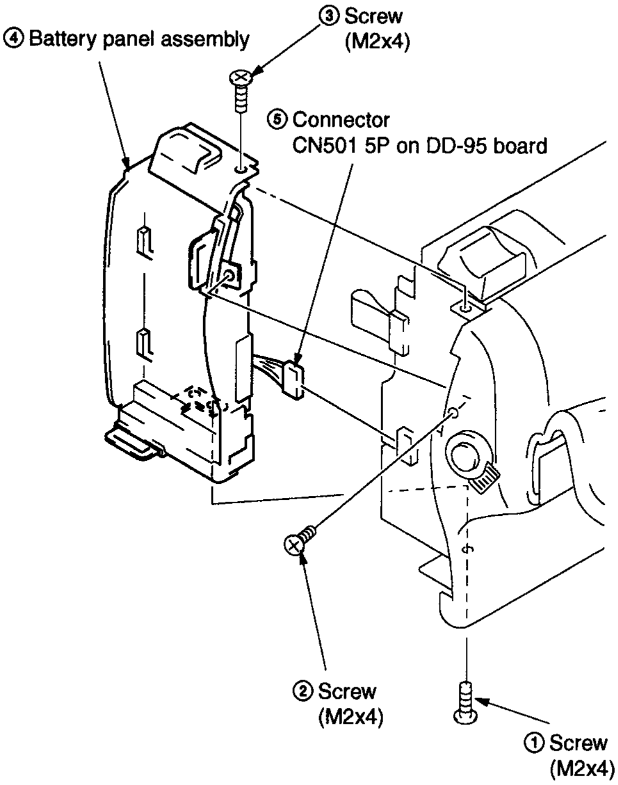
2-1-9. Removal of Control Switch Block (SD-4)


Note: When installing, be sure to check the slide switch is geared with the switch knob
Switch knob
OK
NG
Slide switch
⑤ SD-4 control switch block
③ Two screws (BTP2)
② Two screws (BTP2)
① Three screws (BTP2)
④ Connector CN008, 12P

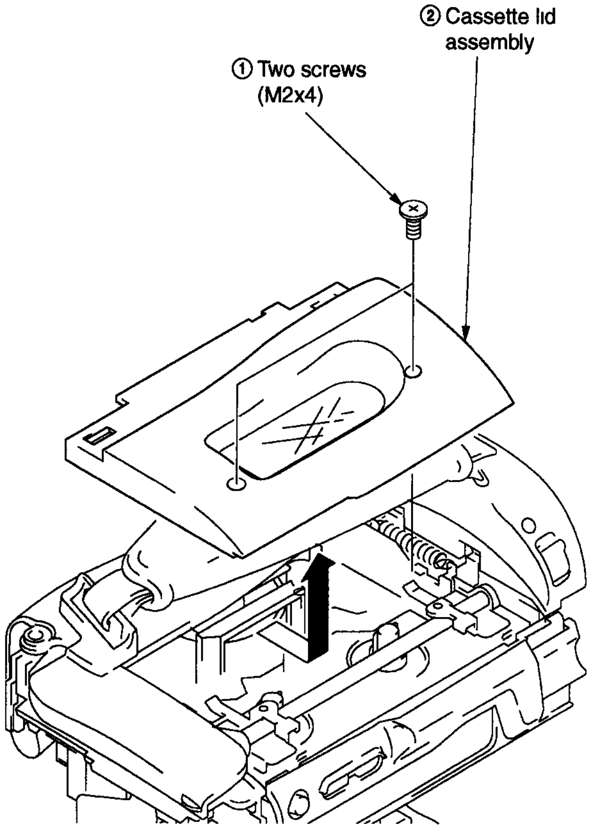
2-1-10. Removal of Shoe Base


① Screw (M2x4)
② Shoe base

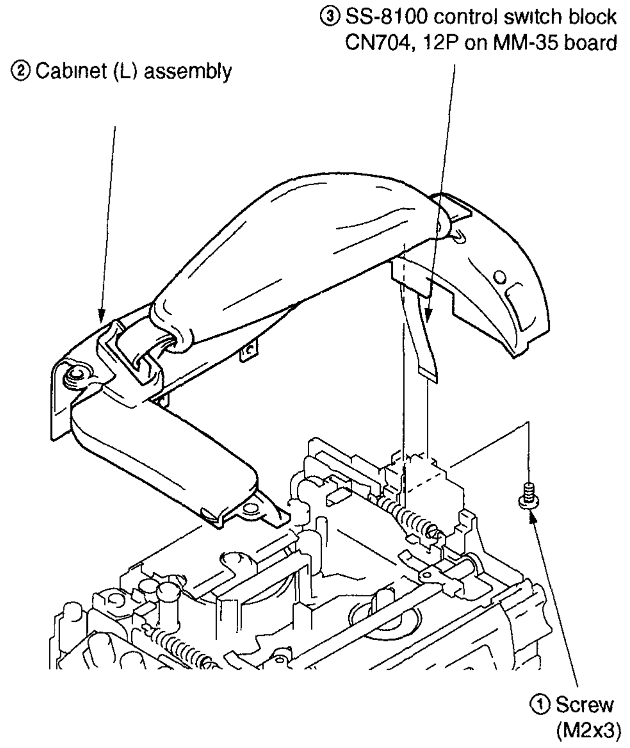
2-1-11. Removal of Battery Panel Assembly


④ Battery panel assembly
③ Screw (M2x4)
⑤ Connector CN501 5P on DD-95 board
② Screw (M2x4)
① Screw (M2x4)

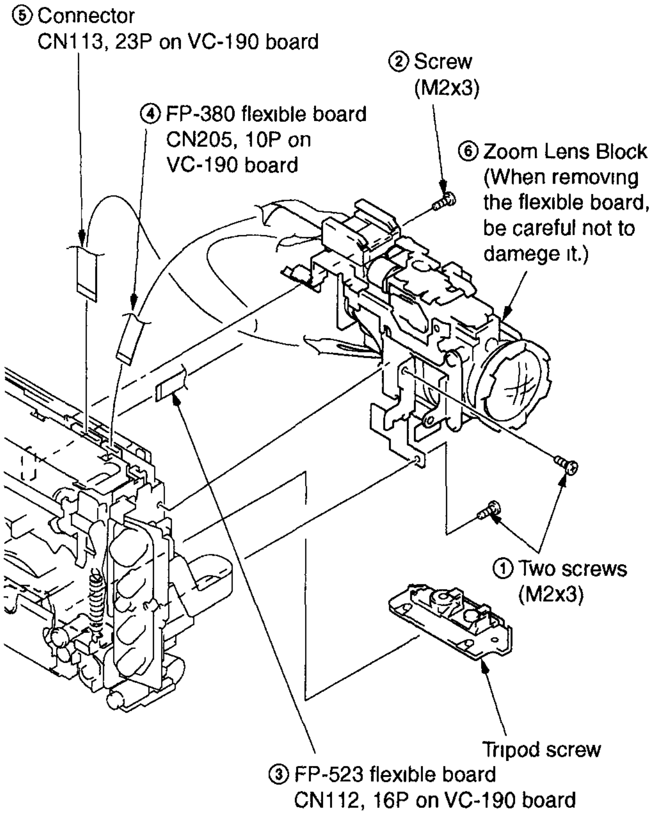
2-1-12. Removal of Cassette Lid Assembly


② Cassette lid assembly
① Two screws (M2x4)

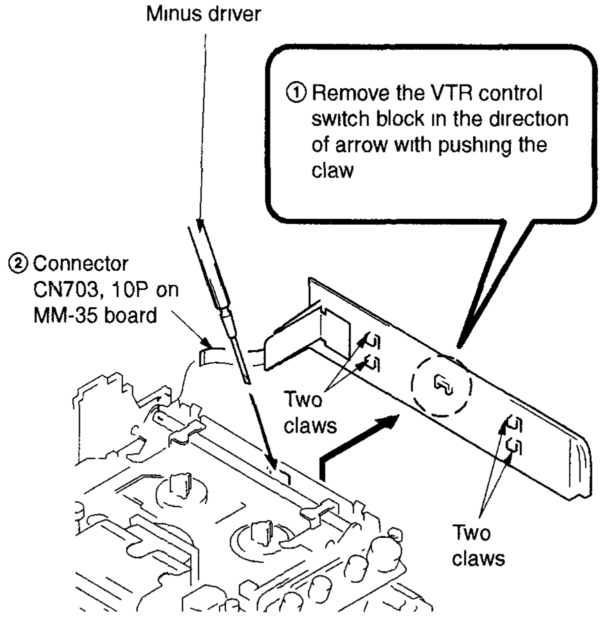
2-1-13. Removal of Cabinet (L) Assembly


③ SS-8100 control switch block
CN704, 12P on MM-35 board
② Cabinet (L) assembly
① Screw
(M2x3)

2-1-15. Removal of Zoom Lens Block

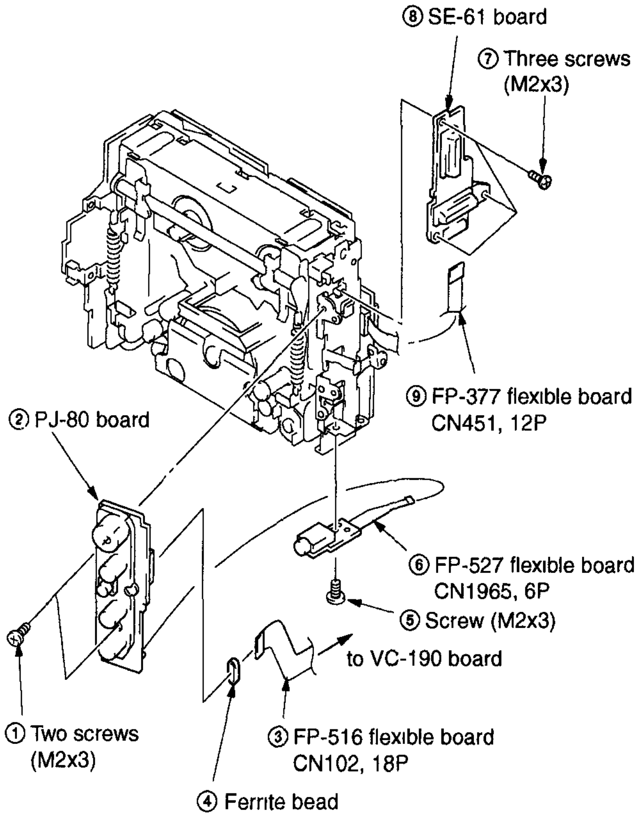

⑤ Connector
CN113, 23P on VC-190 board
② Screw
(M2x3)
④ FP-380 flexible board
CN205, 10P on
VC-190 board
⑥ Zoom Lens Block
(When removing
the flexible board,
be careful not to
damege it.)
① Two screws
(M2x3)
Tripod screw
③ FP-523 flexible board
CN112, 16P on VC-190 board

2-1-14. Removal of VTR Control Switch Block (FK)

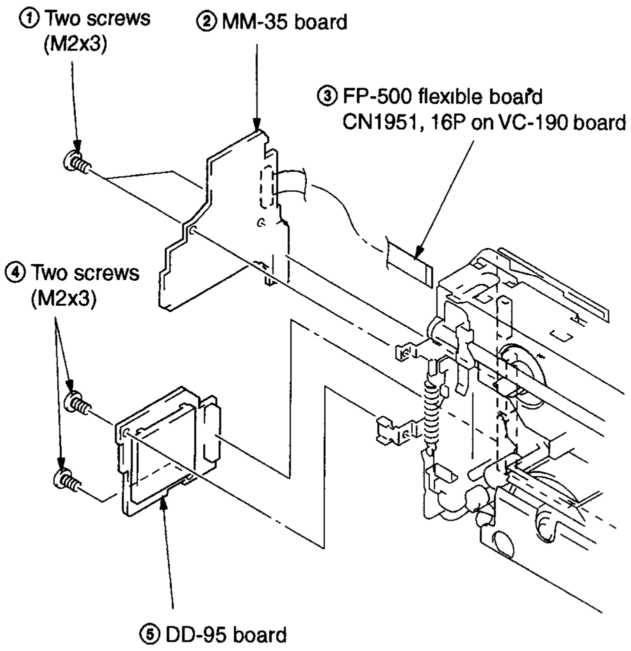

① Remove the VTR control switch block in the direction of arrow with pushing the claw

Minus driver
② Connector
CN703, 10P on
MM-35 board
Two
claws
Two
claws

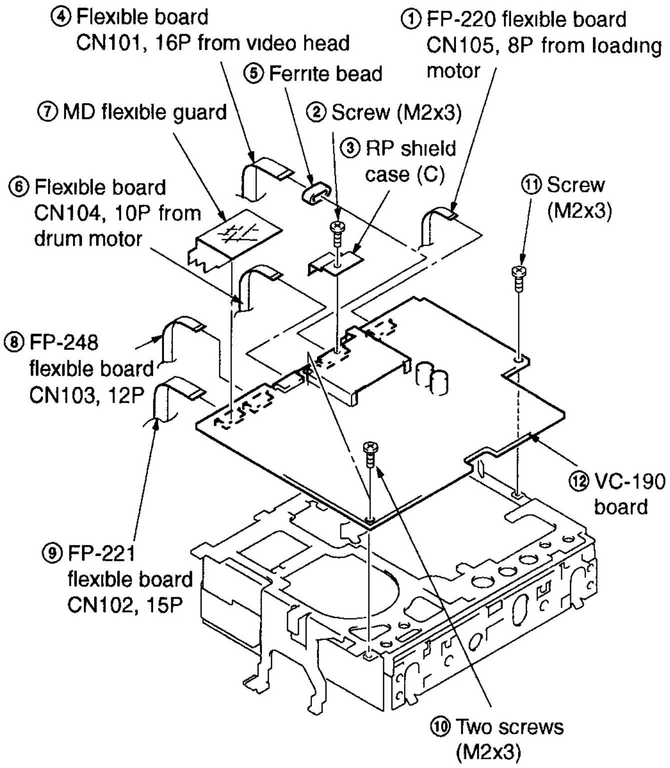
2-1-16. Removal of PJ-80 Board and SE-61 Board


⑧ SE-61 board
⑦ Three screws
(M2x3)
⑨ FP-377 flexible board
CN451, 12P
② PJ-80 board
⑥ FP-527 flexible board
CN1965, 6P
⑤ Screw (M2x3)
to VC-190 board
① Two screws
(M2x3)
③ FP-516 flexible board
CN102, 18P
④ Ferrite bead

2-1-17. Removal of DD-95 Board and MM-35 Board


① Two screws (M2x3)
② MM-35 board
③ FP-500 flexible board CN1951, 16P on VC-190 board
④ Two screws (M2x3)
⑤ DD-95 board

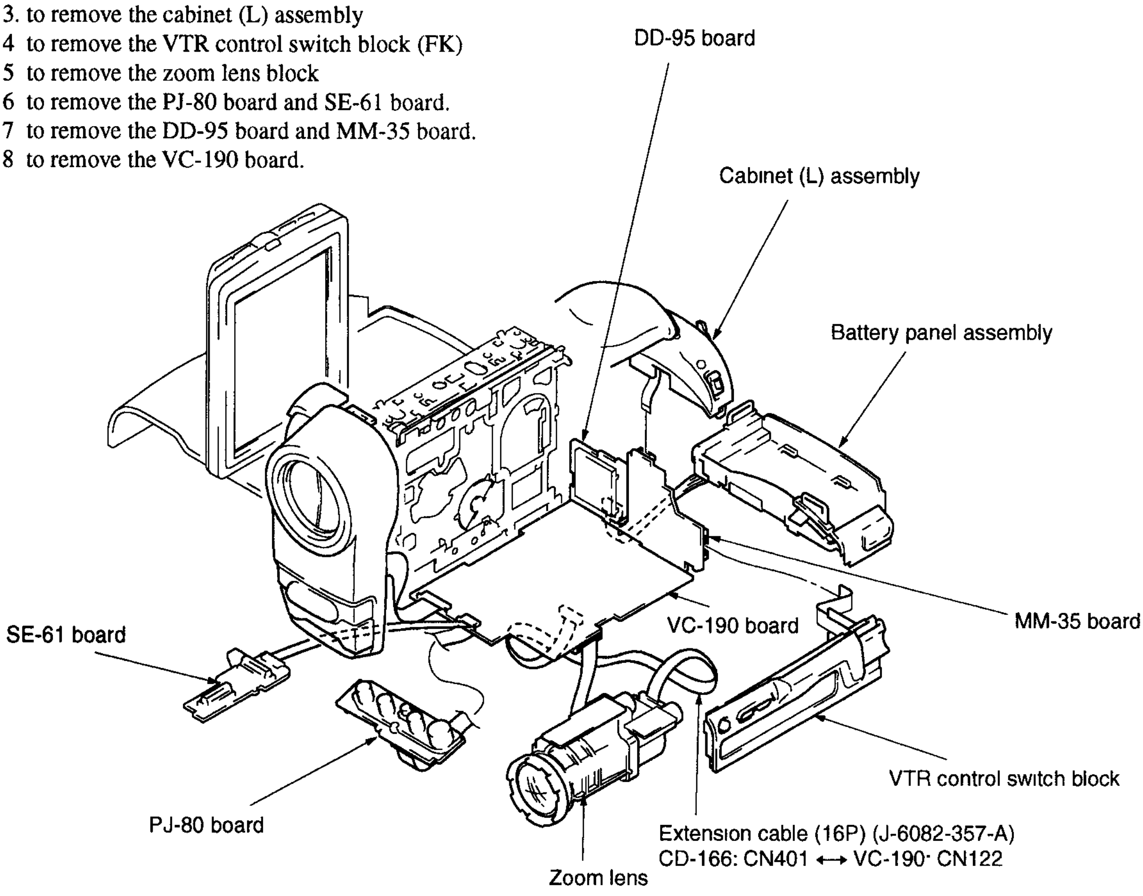
2-1-18. Removal of VC-190 Board


④ Flexible board CN101, 16P from video head
① FP-220 flexible board CN105, 8P from loading motor
⑤ Ferrite bead
⑦ MD flexible guard
② Screw (M2x3)
③ RP shield case (C)
⑥ Flexible board CN104, 10P from drum motor
⑪ Screw (M2x3)
⑧ FP-248 flexible board CN103, 12P
⑫ VC-190 board
⑨ FP-221 flexible board CN102, 15P
⑩ Two screws (M2x3)

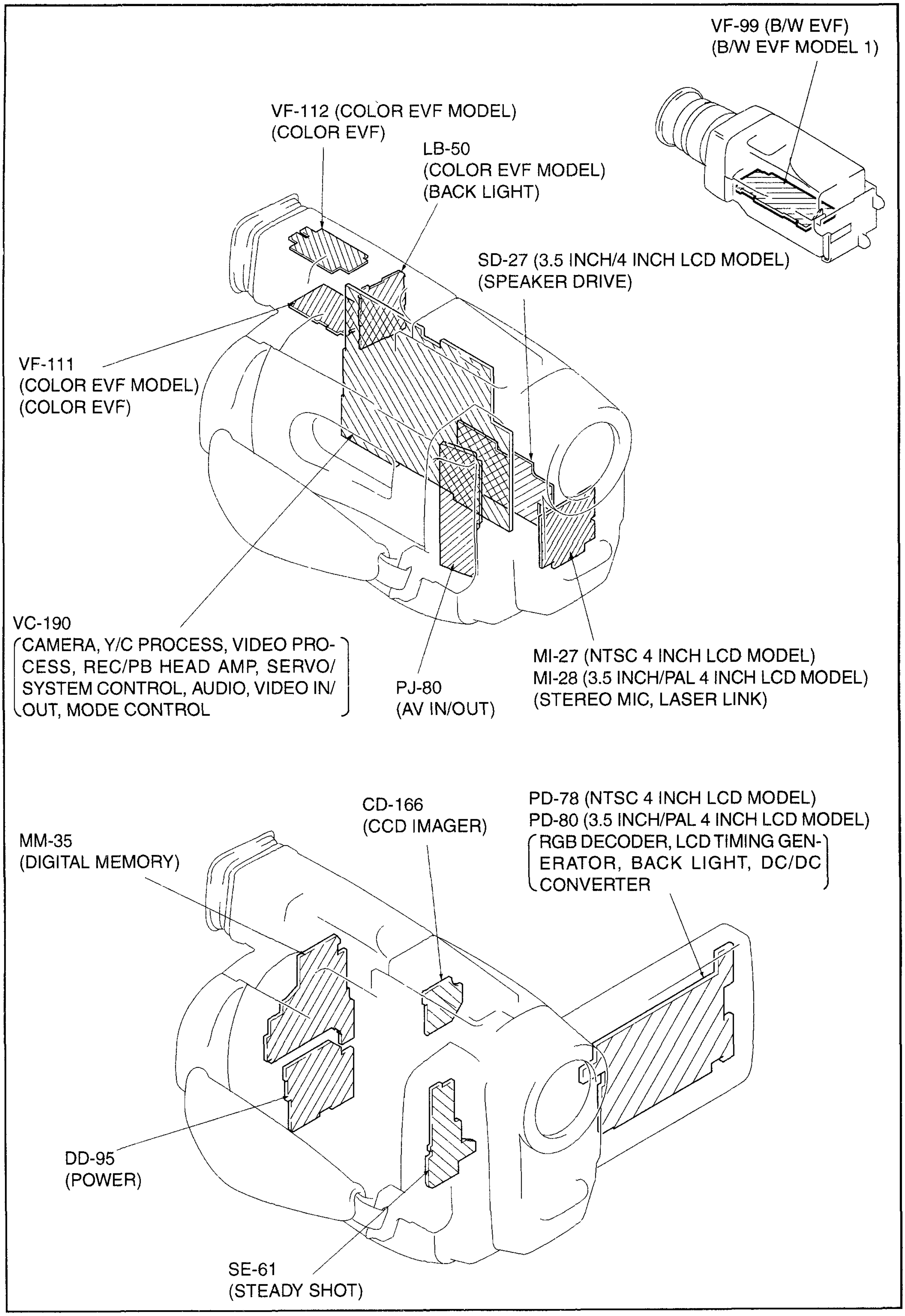
2-1-19. Service Position

Note: When the following parts are removed, be sure to remember the connection parts because those connectors and etc, are needed to connect later on.

① Refer to 2-1-1. to remove the front panel assembly.
② Refer to 2-1-2. to remove the cabinet (R) assembly.
③ Refer to 2-1-11. to remove the battery panel assembly
④ Refer to 2-1-13. to remove the cabinet (L) assembly
⑤ Refer to 2-1-14 to remove the VTR control switch block (FK)
⑥ Refer to 2-1-15 to remove the zoom lens block
⑦ Refer to 2-1-16 to remove the PJ-80 board and SE-61 board.
⑧ Refer to 2-1-17 to remove the DD-95 board and MM-35 board.
⑨ Refer to 2-1-18 to remove the VC-190 board.

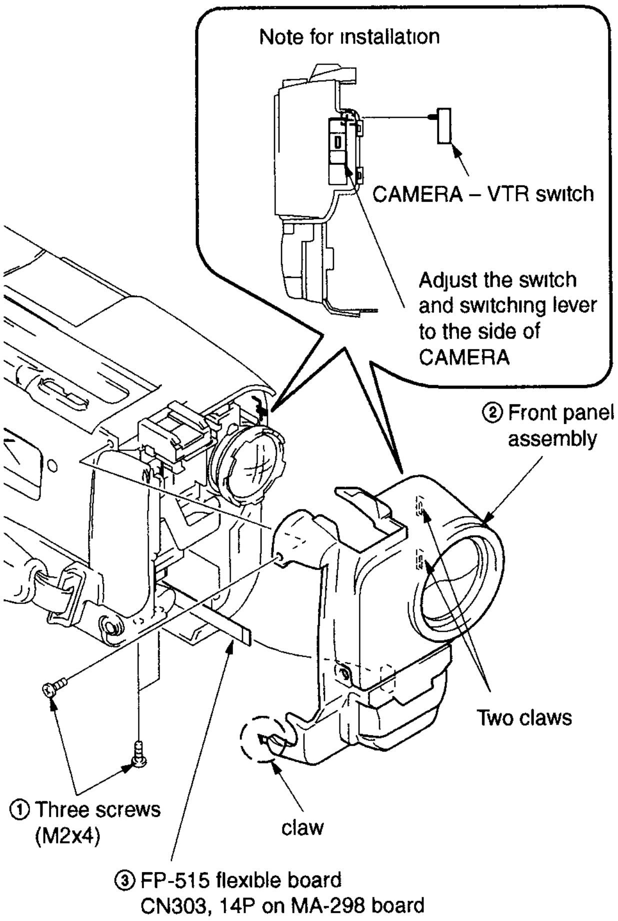

DD-95 board
Cabinet (L) assembly
Battery panel assembly
MM-35 board
VC-190 board
SE-61 board
VTR control switch block
PJ-80 board
Extension cable (16P) (J-6082-357-A)
CD-166: CN401 ←→ VC-190· CN122
Zoom lens

2-1-20. Circuit Boards Location


VF-99 (B/W EVF)
(B/W EVF MODEL 1)
VF-112 (COLOR EVF MODEL)
(COLOR EVF)
LB-50
(COLOR EVF MODEL)
(BACK LIGHT)
SD-27 (3.5 INCH/4 INCH LCD MODEL)
(SPEAKER DRIVE)
VF-111
(COLOR EVF MODEL)
(COLOR EVF)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
PJ-80
(AV IN/OUT)
MI-27 (NTSC 4 INCH LCD MODEL)
MI-28 (3.5 INCH/PAL 4 INCH LCD MODEL)
(STEREO MIC, LASER LINK)
MM-35
(DIGITAL MEMORY)
CD-166
(CCD IMAGER)
PD-78 (NTSC 4 INCH LCD MODEL)
PD-80 (3.5 INCH/PAL 4 INCH LCD MODEL)
RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER
DD-95
(POWER)
SE-61
(STEADY SHOT)

2-2. REMOVAL OF CCD-TRV64E

2-2-1. Removal of Front Panel Assembly



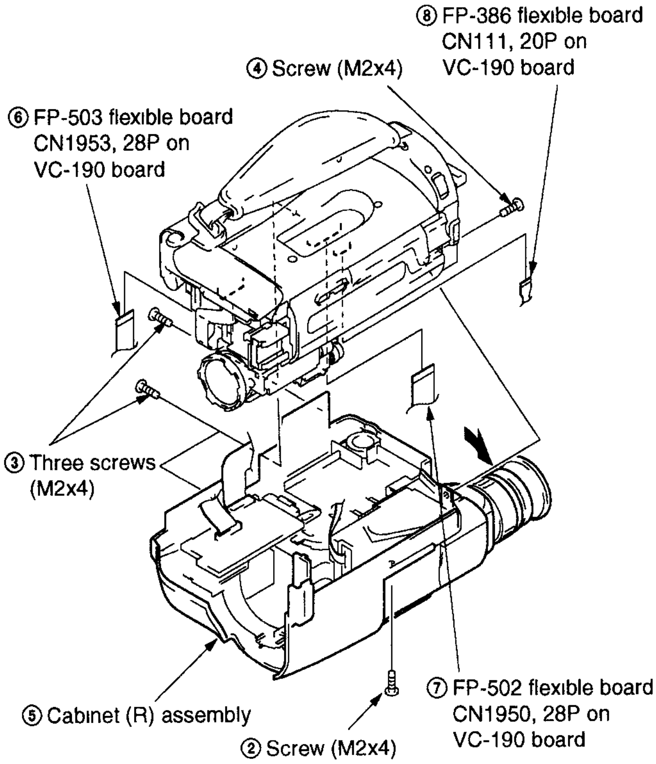
Note for installation

Adjust the switch and switching lever to the side of CAMERA

CAMERA – VTR switch
② Front panel assembly
Two claws
claw
① Three screws (M2x4)
③ FP-515 flexible board CN303, 14P on MA-298 board

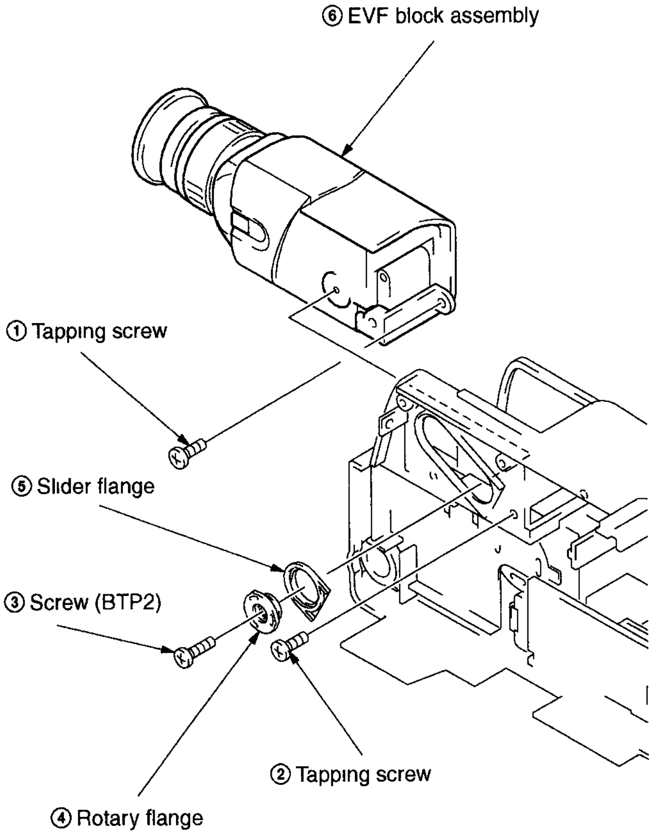
2-2-2. Removal of Cabinet (R) Assembly

① Tilt-up the EVF block assembly to the direction of arrow



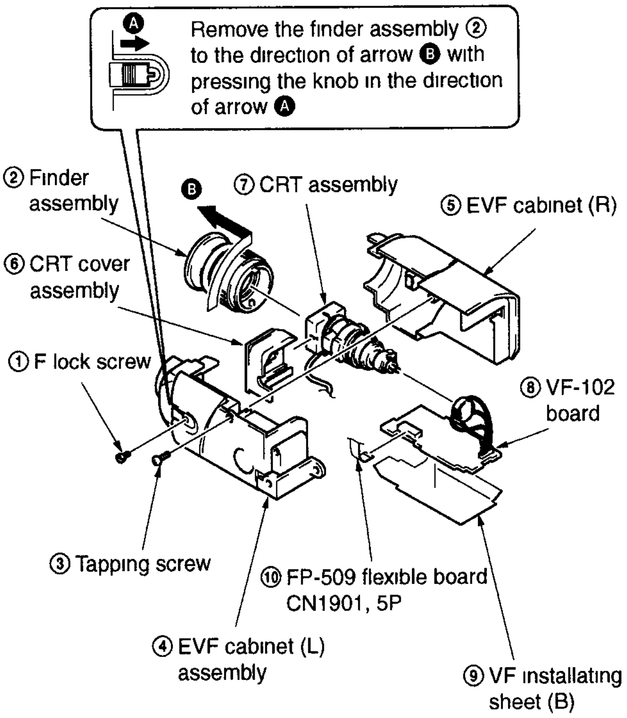
⑧ FP-386 flexible board CN111, 20P on VC-190 board
④ Screw (M2x4)
⑥ FP-503 flexible board CN1953, 28P on VC-190 board
③ Three screws (M2x4)
⑤ Cabinet (R) assembly
② Screw (M2x4)
⑦ FP-502 flexible board CN1950, 28P on VC-190 board

2-2-3. Removal of EVF Block Assembly



⑥ EVF block assembly
① Tapping screw
⑤ Slider flange
③ Screw (BTP2)
② Tapping screw
④ Rotary flange

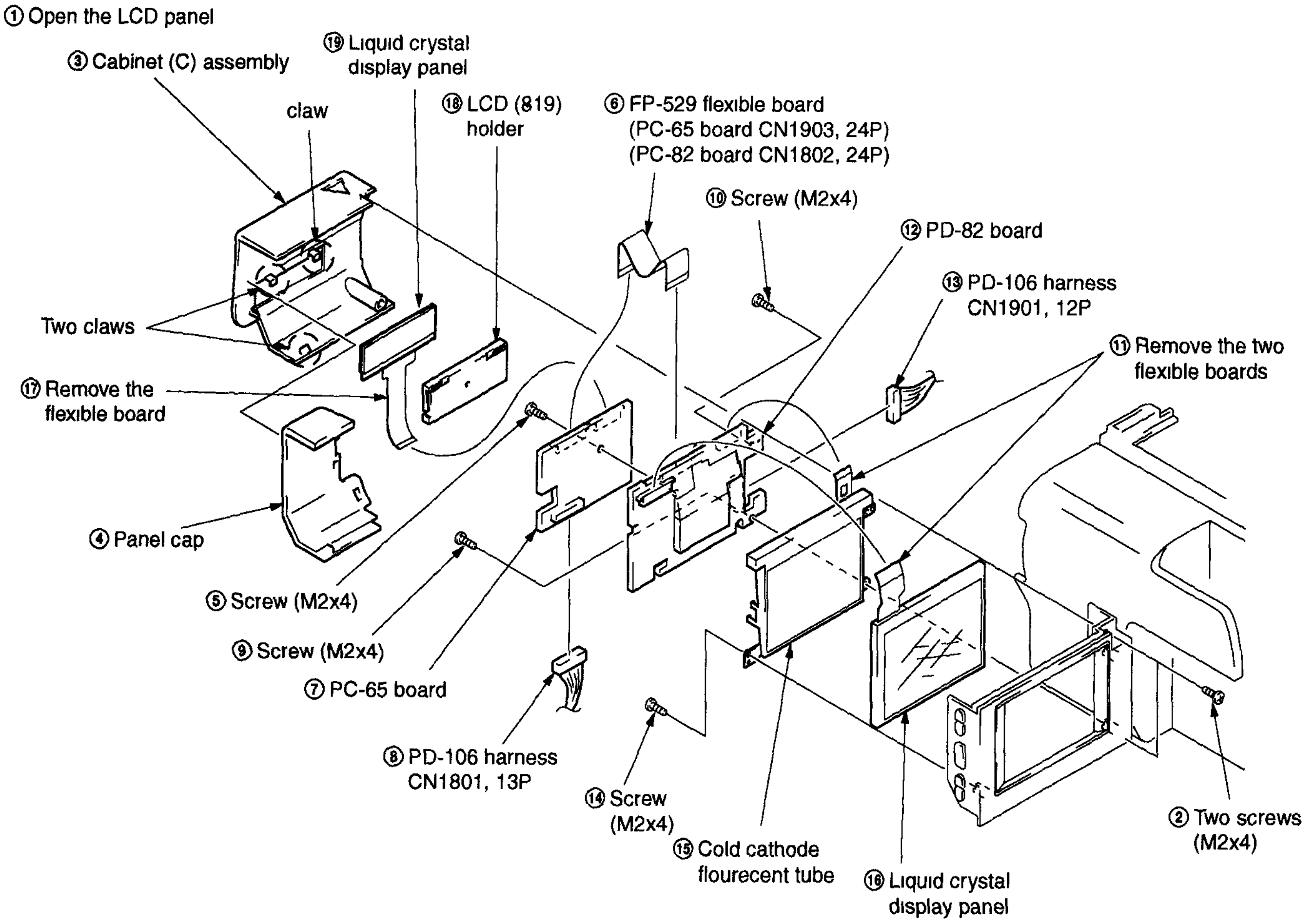
2-2-4. Removal of EVF Block



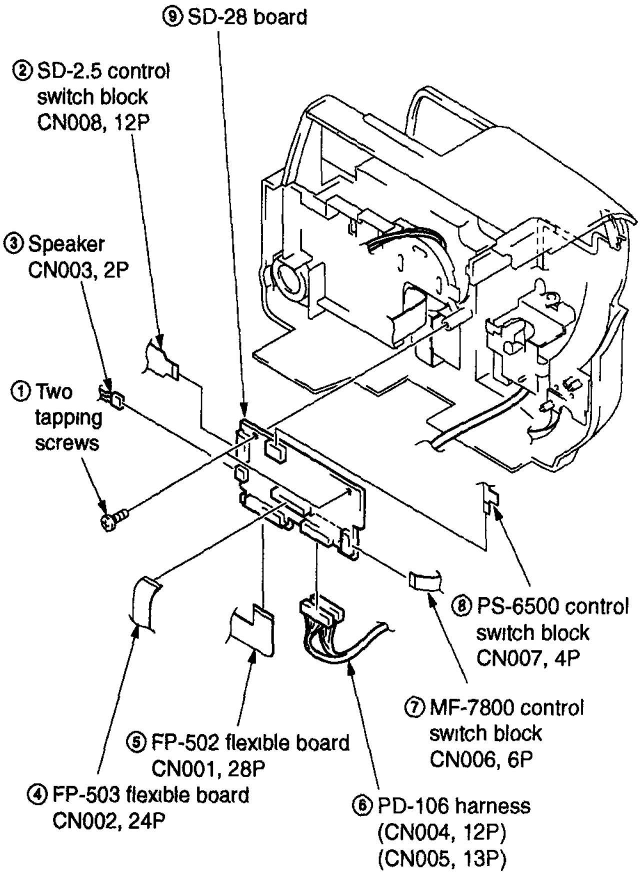
Remove the finder assembly ② to the direction of arrow **B** with pressing the knob in the direction of arrow **A**

A
B
② Finder assembly
⑦ CRT assembly
⑤ EVF cabinet (R)
⑥ CRT cover assembly
① F lock screw
⑧ VF-102 board
③ Tapping screw
⑩ FP-509 flexible board CN1901, 5P
④ EVF cabinet (L) assembly
⑨ VF installating sheet (B)

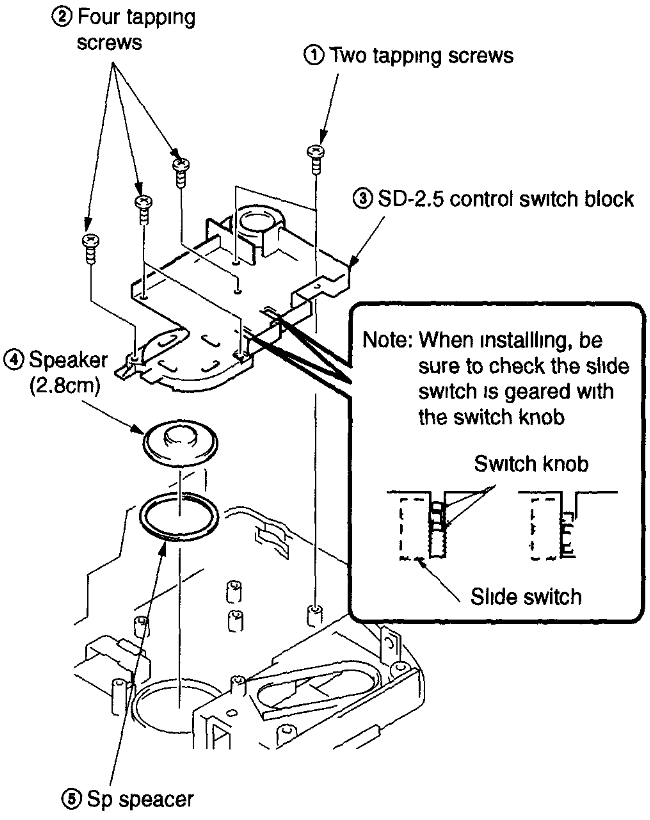
2-2-5. Removal of LCD Block


① Open the LCD panel
③ Cabinet (C) assembly
⑲ Liquid crystal display panel
claw
⑱ LCD (819) holder
⑥ FP-529 flexible board (PC-65 board CN1903, 24P) (PC-82 board CN1802, 24P)
⑩ Screw (M2x4)
⑫ PD-82 board
⑬ PD-106 harness CN1901, 12P
⑪ Remove the two flexible boards
Two claws
⑰ Remove the flexible board
④ Panel cap
⑤ Screw (M2x4)
⑨ Screw (M2x4)
⑦ PC-65 board
⑧ PD-106 harness CN1801, 13P
⑭ Screw (M2x4)
⑮ Cold cathode flourecent tube
⑯ Liquid crystal display panel
② Two screws (M2x4)

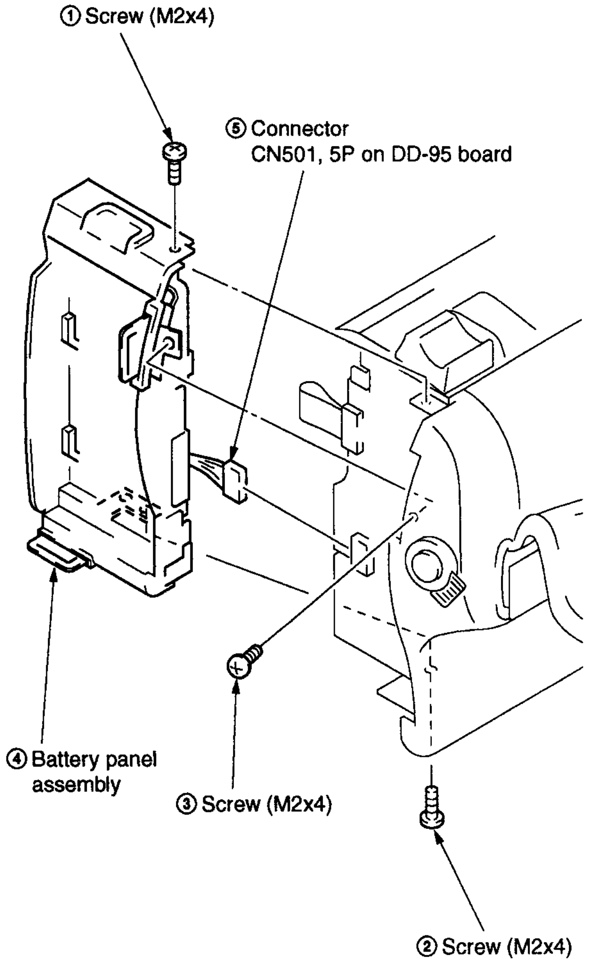
2-2-6. Removal of SD-28 Board


⑨ SD-28 board
② SD-2.5 control switch block CN008, 12P
③ Speaker CN003, 2P
① Two tapping screws
⑧ PS-6500 control switch block CN007, 4P
⑦ MF-7800 control switch block CN006, 6P
⑤ FP-502 flexible board CN001, 28P
④ FP-503 flexible board CN002, 24P
⑥ PD-106 harness (CN004, 12P) (CN005, 13P)

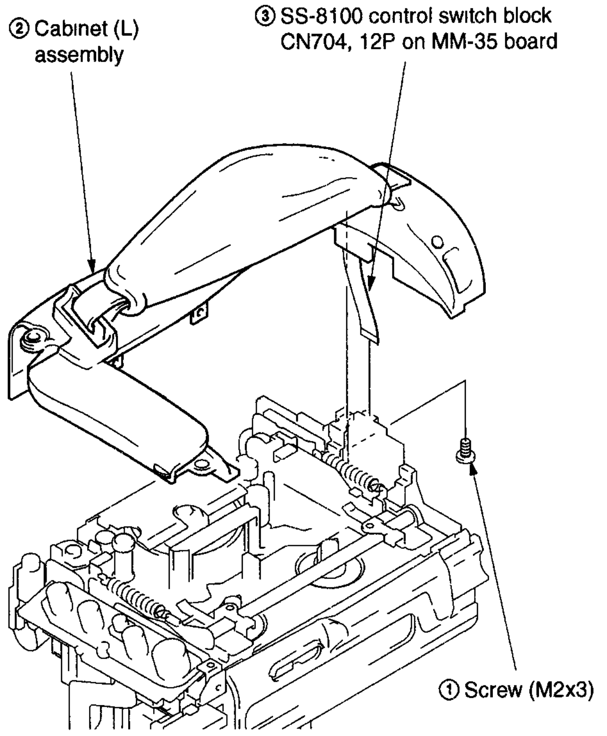
2-2-7. Removal of Control Switch Block


② Four tapping screws
① Two tapping screws
③ SD-2.5 control switch block
Note: When installing, be sure to check the slide switch is geared with the switch knob
④ Speaker (2.8cm)
Switch knob
Slide switch
⑤ Sp speacer

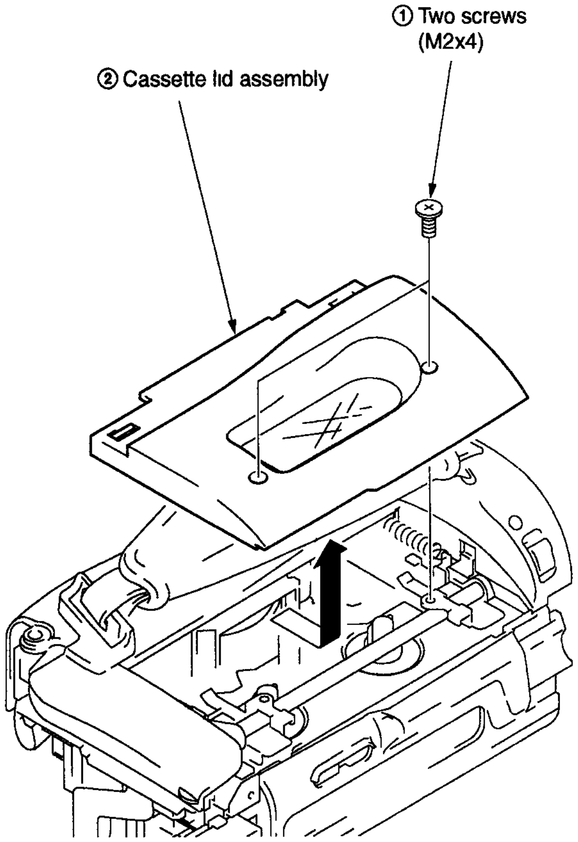
2-2-8. Removal of Battery Panel Assembly


① Screw (M2x4)
⑤ Connector
CN501, 5P on DD-95 board
④ Battery panel
assembly
③ Screw (M2x4)
② Screw (M2x4)

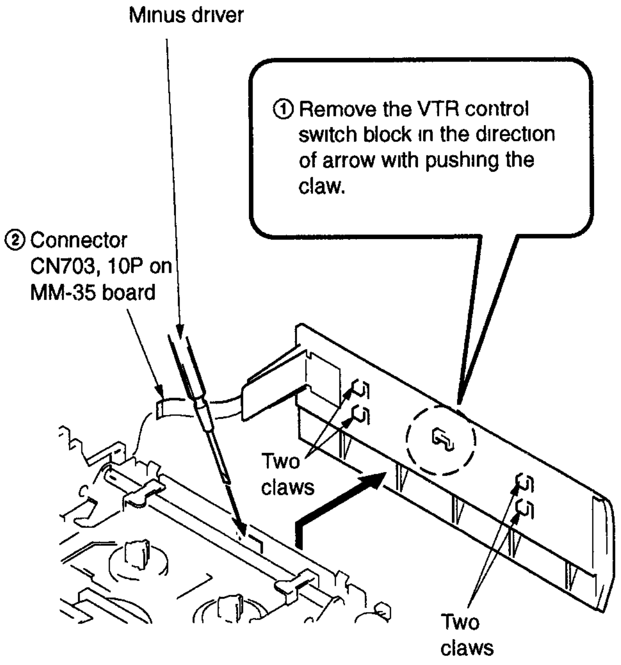
2-2-10. Removal of Cabinet (L) Assembly


② Cabinet (L)
assembly
③ SS-8100 control switch block
CN704, 12P on MM-35 board
① Screw (M2x3)

2-2-9. Removal of Cassette Lid Assembly

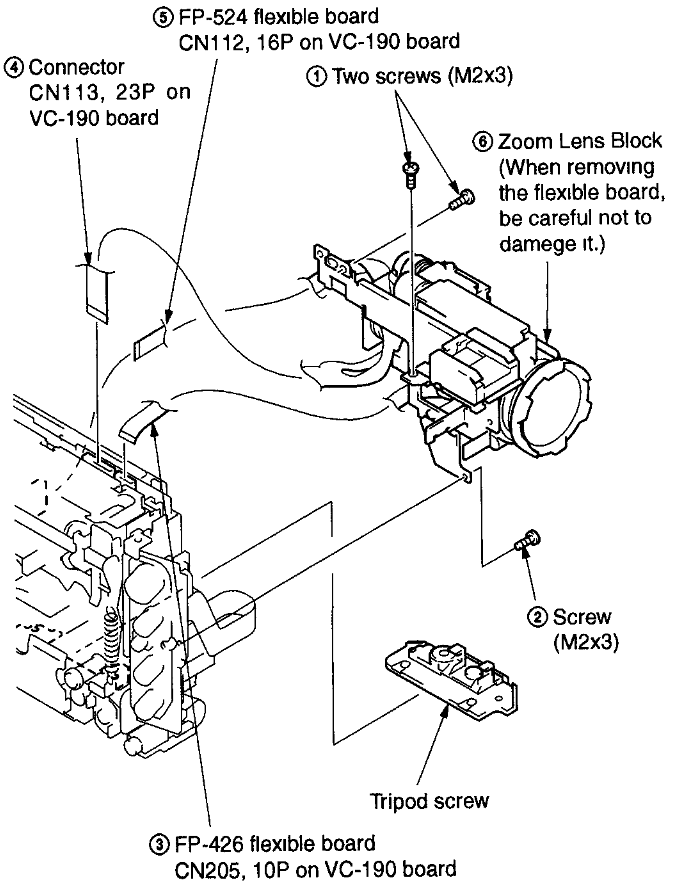

① Two screws
(M2x4)
② Cassette lid assembly

2-2-11. Removal of VTR Control Switch Block (FK)

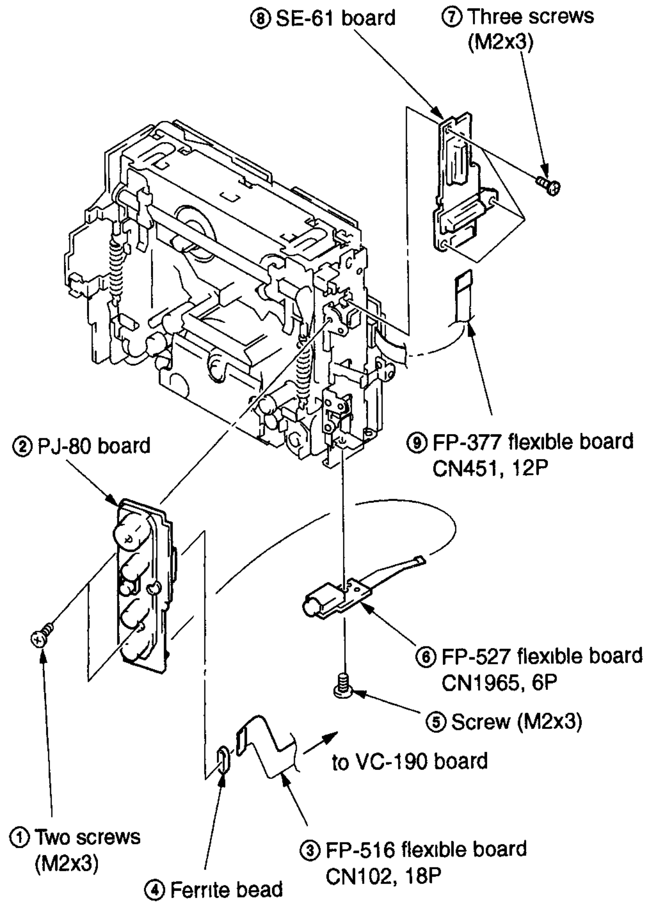

Minus driver
② Connector
CN703, 10P on
MM-35 board
Two
claws
Two
claws

① Remove the VTR control switch block in the direction of arrow with pushing the claw.

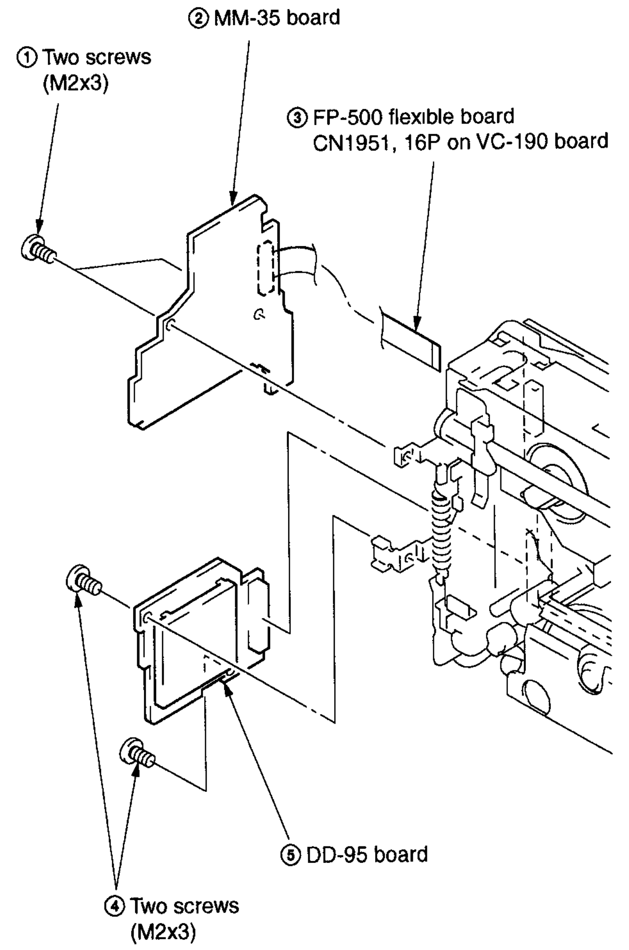
2-2-12. Removal of Zoom Lens Block


⑤ FP-524 flexible board
CN112, 16P on VC-190 board
④ Connector
CN113, 23P on
VC-190 board
① Two screws (M2x3)
⑥ Zoom Lens Block
(When removing
the flexible board,
be careful not to
damege it.)
② Screw
(M2x3)
Tripod screw
③ FP-426 flexible board
CN205, 10P on VC-190 board

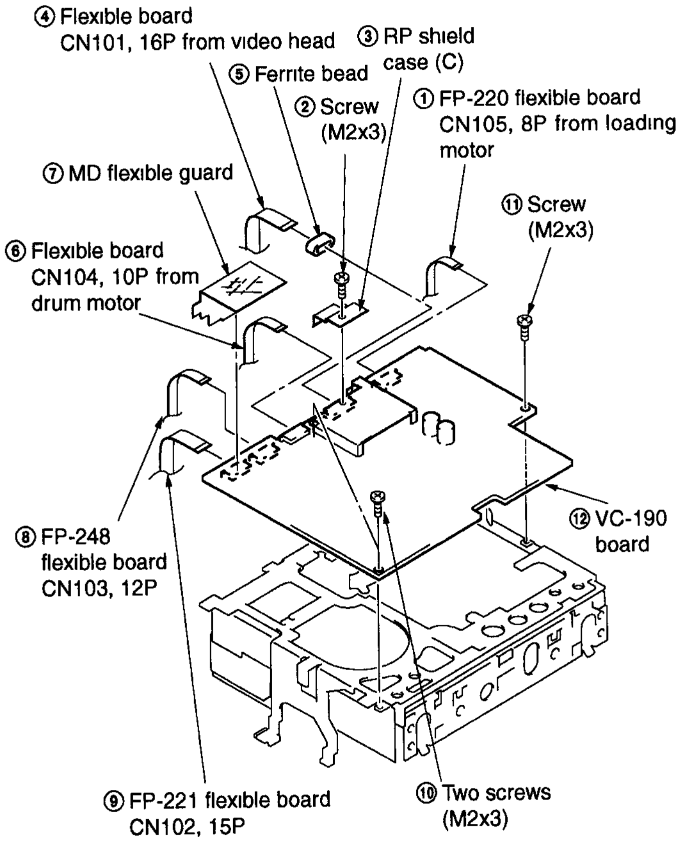
2-2-13. Removal of PJ-80 Board and SE-61 Board


⑧ SE-61 board
⑦ Three screws
(M2x3)
② PJ-80 board
⑨ FP-377 flexible board
CN451, 12P
⑥ FP-527 flexible board
CN1965, 6P
⑤ Screw (M2x3)
to VC-190 board
① Two screws
(M2x3)
④ Ferrite bead
③ FP-516 flexible board
CN102, 18P

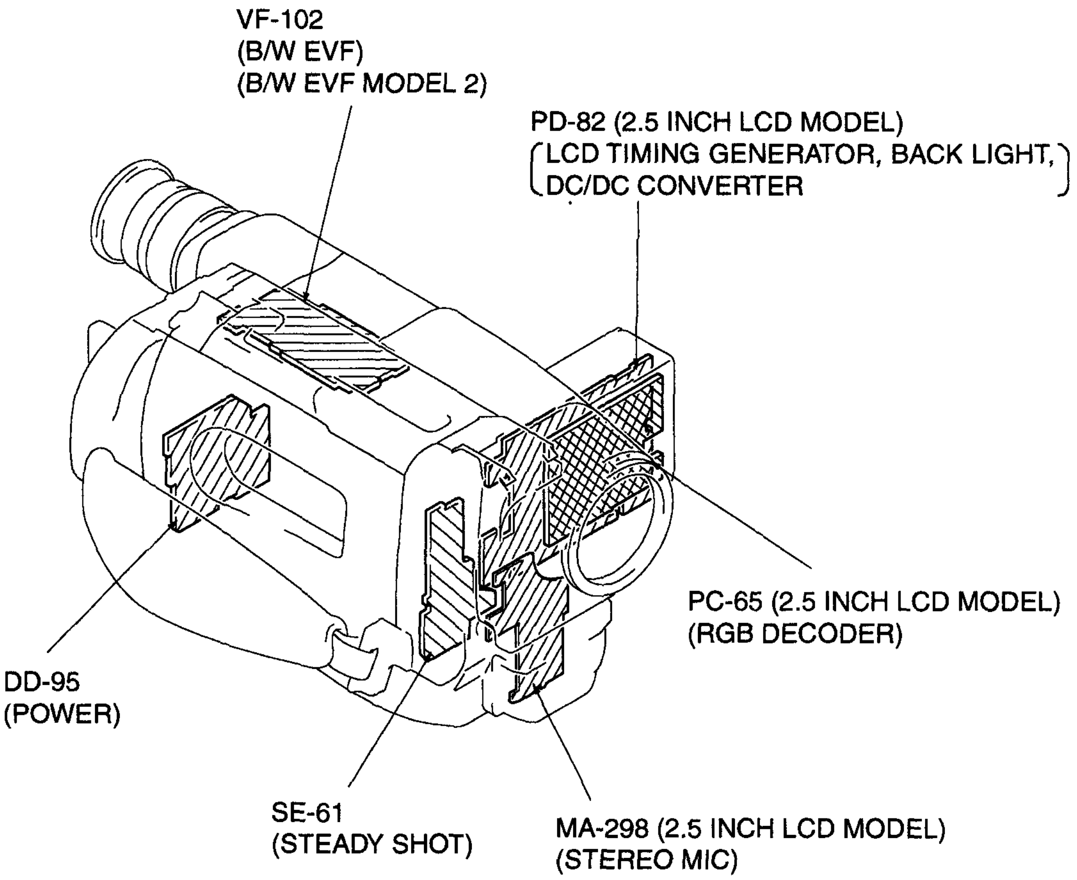
2-2-14. Removal of DD-95 Board and MM-35 Board

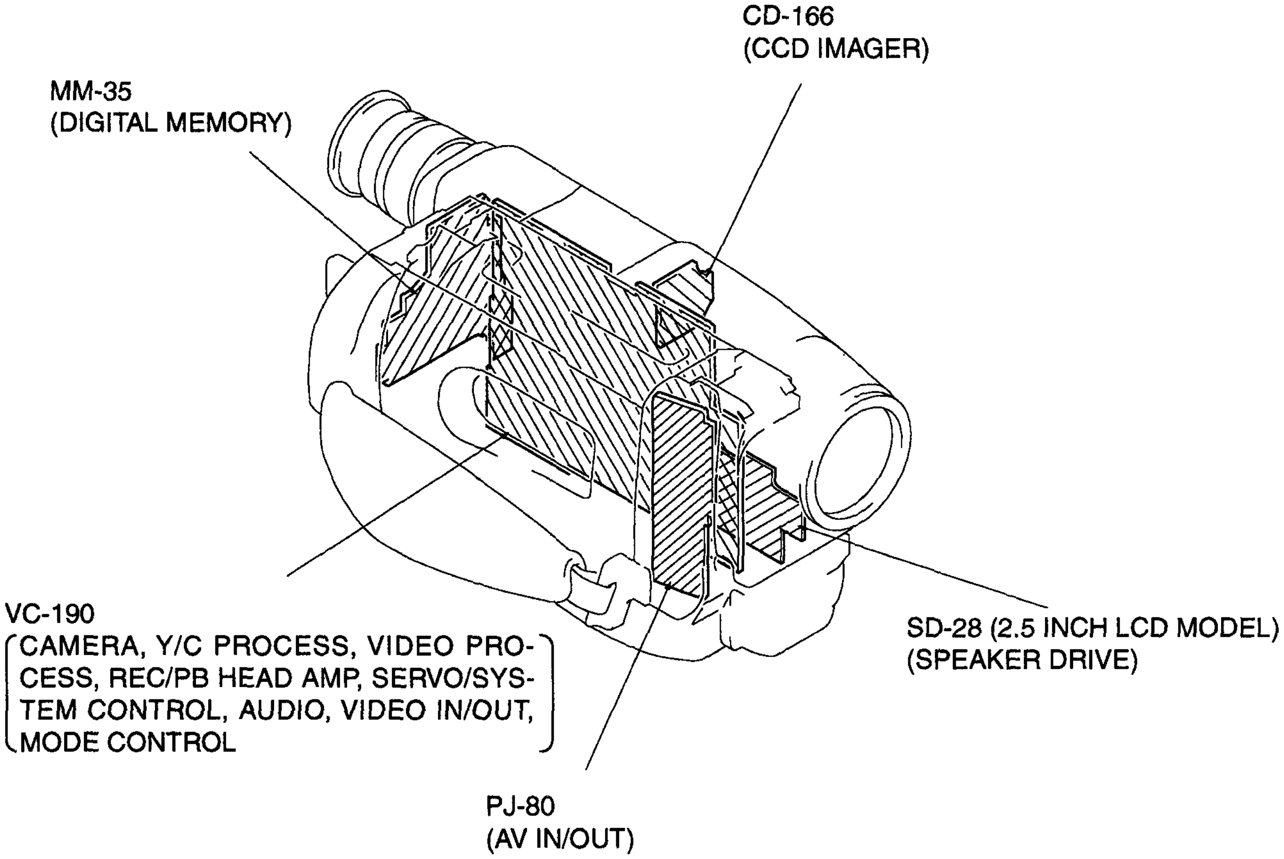

② MM-35 board
① Two screws
(M2x3)
③ FP-500 flexible board
CN1951, 16P on VC-190 board
⑤ DD-95 board
④ Two screws
(M2x3)

2-2-15. Removal of VC-190 Board


④ Flexible board
CN101, 16P from video head
③ RP shield
case (C)
⑤ Ferrite bead
② Screw
(M2x3)
① FP-220 flexible board
CN105, 8P from loading
motor
⑦ MD flexible guard
⑪ Screw
(M2x3)
⑥ Flexible board
CN104, 10P from
drum motor
⑫ VC-190
board
⑧ FP-248
flexible board
CN103, 12P
⑨ FP-221 flexible board
CN102, 15P
⑩ Two screws
(M2x3)

2-2-16. Circuit Boards Location


VF-102
(B/W EVF)
(B/W EVF MODEL 2)
PD-82 (2.5 INCH LCD MODEL)
(LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER)
PC-65 (2.5 INCH LCD MODEL)
(RGB DECODER)
DD-95
(POWER)
SE-61
(STEADY SHOT)
MA-298 (2.5 INCH LCD MODEL)
(STEREO MIC)


CD-166
(CCD IMAGER)
MM-35
(DIGITAL MEMORY)
VC-190
(CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL)
SD-28 (2.5 INCH LCD MODEL)
(SPEAKER DRIVE)
PJ-80
(AV IN/OUT)

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM

Refer to page 3 as Table for distinction functions of models and classification.

CD-166 BOARD
(SEE PAGE 4-10)
IC401
CCD IMAGER
VC-190 BOARD
(SEE PAGE 4-21·24·27·31·35·38·41·45·49·54·57·62)
IC202
TIMING GENERATOR
ZOOM LENS
IRIS METER
FOCUS MOTOR
ZOOM MOTOR
HALL
FOCUS SENSOR
ZOOM SENSOR
IC252
FOCUS MOTOR DRIVE
ZOOM MOTOR DRIVE
IC255
FOCUS/ZOOM PRE DRIVE
IC251 IC253
IRIS DRIVE
HALL AMP
SE-61 BOARD
(SEE PAGE 4-12)
IC451
IC455
YAW SENSOR
PITCH SENSOR
SENSOR AMP
PJ-80 BOARD
(SEE PAGE 4-65)
S VIDEO
J101 TERMINAL BOARD
AUDIO
VIDEO
RFU DC OUT
HEADPHONE
(SEE PAGE 4-65)
FP-527 (FLEXIBLE)
IC129
INPUT/OUTPUT SELECT
IC203
S/H AGC
A/D CONV
IC115
CAMERA PROCESS
IC114
ZOOM TBC CNR PROCESS
EXCEPT DIGITAL EFFECT MODEL
DIGITAL EFFECT MODEL
IC108
D/A CONVERTER (EVR)
ADJUST VOLTAGE
MM-35 BOARD (1/3)
(SEE PAGE 4-72)
IC704
MEMORY CONTROL
IC702
MEMORY
IC106
CHROMA PROCESS
IC105
Y PROCESS
IC102
MOD/DEMOD EMPH/DEEMPH
IC103
A/D CONV
IC101
REC/PB AMP
IC116
EEP ROM
FLYING ERASE OSC
IC800
RGB DECODER D/A CONV
COLOR EVF MODEL
IC104
CHARACTER GENERATOR
IC1952
IC301
MIC AMP
MIC
IC109
AFM AUDIO PROCESS
IC120
ATF SERVO
IC361
IR TRANSMITTER
IC302
REMOTE COMMANDER RECEIVER
IR TRANSMITTER MODEL
MI-28 BOARD
MI-27 BOARD
MA-298 BOARD
(SEE PAGE 4-81·84)
(SEE PAGE 4-87)
INTELLIGENT ACCESSORY SHOE
SD-27 BOARD (1/3)
SD-28 BOARD (1/3)
(SEE PAGE 4-97)
IC001
SPEAKER/HEAD PHONE AMP
SP901 SPEAKER
VF-99 BOARD
(SEE PAGE 4-157)
VF-102 BOARD
(SEE PAGE 4-161)
T901
H OUT
IC901
CRT DRIVE
V901 CRT
SD-28 BOARD (1/3)
(SEE PAGE 4-97)
PC-65 BOARD (1/2)
(SEE PAGE 4-132)
PD-82 BOARD (1/2)
(SEE PAGE 4-135·139)
IC1951
DC/DC CONVERTER
BACK LIGHT DRIVE
IC1802
D/A CONV (EVR)
IC1801
RGB DECODER
IC1901
TIMING GENERATOR
LCD PANEL
BACK LIGHT
VF-112 BOARD
(SEE PAGE 4-152)
IC901
I/O EXP
IC902
LCD DRIVE
IC904
TIMING GENERATOR
LOOK ON SENSOR
IC852
REG
IC851
DC/DC CONVERTER BACK LIGHT DRIVE
POWER SAVE
VF-111 BOARD
(SEE PAGE 4-148)
IC853-854
LB-50 BOARD
BACK LIGHT
(SEE PAGE 4-147)
LCD PANEL
SD-27 BOARD (1/3)
(SEE PAGE 4-97)
IC802/IC1802
D/A CONV (EVR)
IC801/IC1801
RGB DECODER
TIMING GENERATOR
IC901/IC1901
IC951/IC1951
DC/DC CONVERTER
BACK LIGHT DRIVE
LCD PANEL
PD-78/80 BOARD (1/2)
(PD-78 SEE PAGE 4-105·110·113)
(PD-80 SEE PAGE 4-115·120·123)
FLYING ERASE
B-MECHA CHASSIS
(SEE PAGE 4-49)
FP-220 (FLEXIBLE)
LOADING MOTOR
MODE SWITCH
FP-249 (FP-355, 356) (FLEXIBLE)
T/E LED
T REEL FG SENSOR
S REEL FG SENSOR
TAPE TOP SENSOR
TAPE END SENSOR
REC PROOF
CC DOWN
IC122
LOADING MOTOR DRIVE
TAPE TOP DETECT
T REEL FG AMP
S REEL FG AMP
TAPE END DETECT
LED DRIVE
IC121
WAVE SHAPER
DRUM MOTOR
DRUM FG PG
DRUM MOTOR DRIVE
IC121
IC501
DRUM PWM DRIVE
CAPSTAN PWM DRIVE
IC122
LPF
CAPSTAN MOTOR
CAPSTAN FG
IC001
CAPSTAN MOTOR DRIVE
WAVE SHAPER
DD-95 BOARD (1/2)
(SEE PAGE 4-163)
IC117
MECHA/CAMERA CONTROL/SERVO
MECHA/CAMERA CONTROL
SERVO
CAMERA VIDEO AUDIO SERVO CONTROL SIG
IC104
(SEE PAGE 4-72)
MM-35 BOARD (1/3)
IC701
VSC
TIME CODE MODEL
IC1952
MODE CONTROL
IC1951
INITIAL RESET BACKUP VCC
LITHIUM BATTERY
IC1955
LANC I/O
SD-27 BOARD (1/3)
(SEE PAGE 4-97)
SD-28 BOARD (1/3)
(SEE PAGE 4-97)
IC991
LCD INDICATOR DRIVE
LCD INDICATOR
PD-78 BOARD (1/2)
(SEE PAGE 4-105·110)
PANEL BRIGHT SW
VOLUME SW
PC-65 BOARD (1/2)
(SEE PAGE 4-132)
IC1991
PD-82 BOARD (1/2)
(SEE PAGE 4-139)
CONTROL SWITCH BLOCK (PS-6500)
(SEE PAGE 4-99)
POWER SW
CONTROL SWITCH BLOCK (MF)
(SEE PAGE 4-99)
FOCUS SW
FOCUS DIAL
IC1991
PD-80 BOARD (1/2)
(SEE PAGE 4-115·120)
CONTROL SWITCH BLOCK (SD-4)
(SEE PAGE 4-144)
CONTROL SWITCH BLOCK (SD-2.5)
(SEE PAGE 4-145)
CONTROL DIAL
PANEL CLOSE SW
CAMERA FUNCTION SW MENU SW
CONTROL SWITCH BLOCK (SS-8100)
(SEE PAGE 4-70)
LANC
CAMERA STANDBY SW PHOTO STANBY SW
START/STOP SW
EJECT SW
PHOTO REC SW
PHOTO MODE MODEL
VTR FUNCTION SW
ZOOM SW
MM-35 BOARD (1/3)
(SEE PAGE 4-72)
VTR CONTROL SWITCH BLOCK (FK)
(SEE PAGE 4-70)
J901 BATTERY TERMINAL
IC501
DC/DC CONVERTER
DRUM/CAPSTAN PWM DRIVE
DD-95 BOARD (1/2)
(SEE PAGE 4-163)

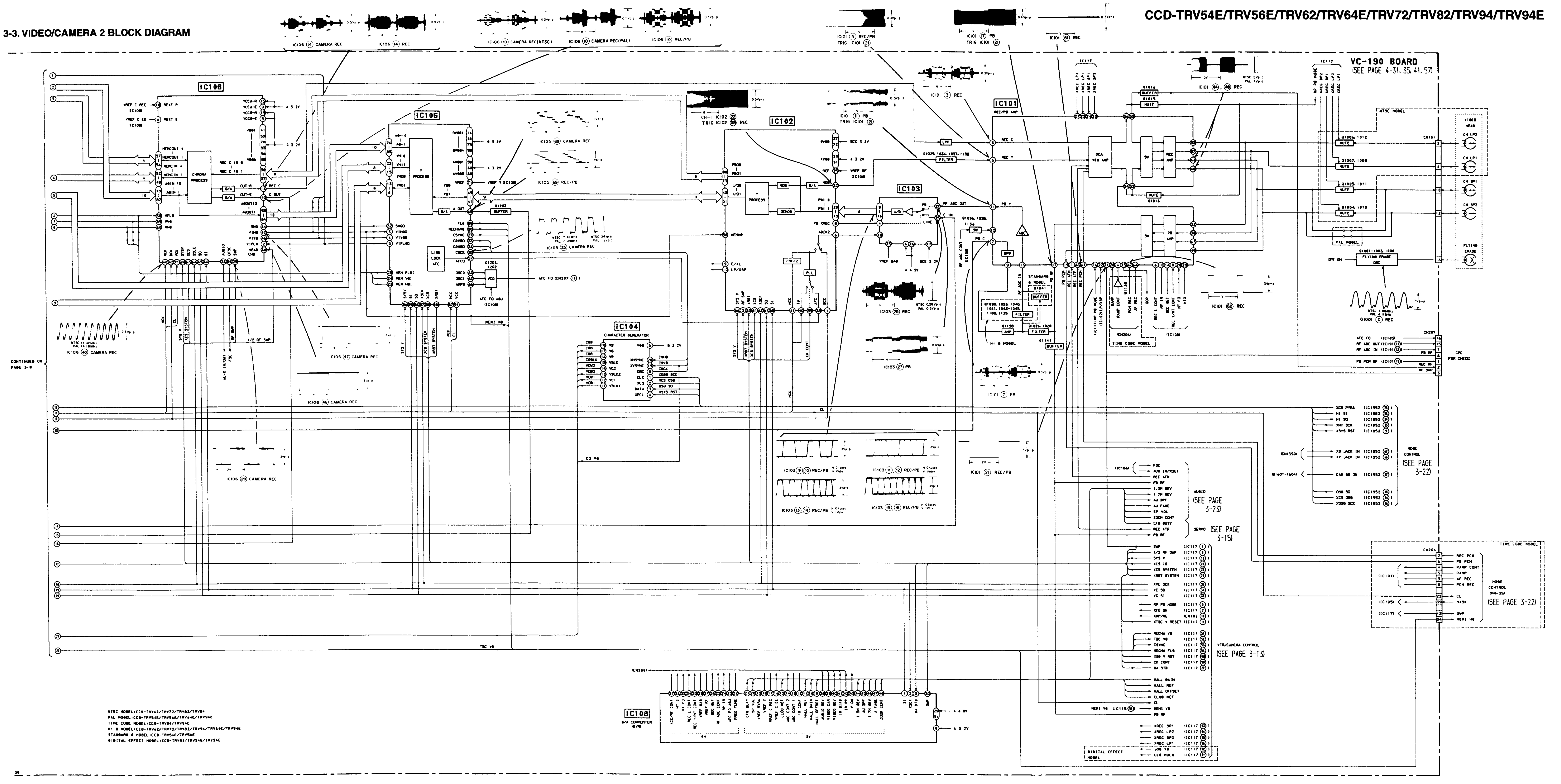
NTSC MODEL : CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL : CCD-TRV54E/TRV56E/TRV6 E/TRV94E
2.5 LCD MODEL : CCD-TRV64E
3.5 LCD MODEL : CCD-TRV62/TRV72/TR 54E
4 LCD MODEL : CCD-TRV82/TRV94/TRV5 E/TRV94E
DIGITAL EFFECT MODEL : CCD-TRV94/T V54E/TRV94E
IR TRANSMITTER MODEL : CCD-TRV62/T V72/TRV82
COLOR EVF MODEL : CCD-TRV72/TRV82/ RV94/TRV94E
B/W EVF MODEL : CCD-TRV62/TRV54E/T V56E/TRV64E
TIME CODE MODEL : CCD-TRV94/TRV94E
Hi 8 MODEL : CCD-TRV62/TRV72/TRV82/TRV94/TRV64E/TRV94E
PHOTO MODE MODEL : CCD-TRV94/TRV54 /TRV94E

3-2. VIDEO/CAMERA 1 BLOCK DIAGRAM

VC-190 BOARD
(SEE PAGE 4-21, 38, 57)
CD-166 BOARD
(SEE PAGE 4-10)
IC401
CCD IMAGER
BUFFER
IC202
TIMING GENERATOR
IC203
S/H AGC A/D CONVERTER
A/D CONVERTER
IC115
CAMERA C PROCESS
CAMERA Y PROCESS
IC114
ZOOM TBC CHR PROCESS
IC702
MEMORY
IC704
MEMORY CONTROL
MM-35 BOARD (1/3)
(SEE PAGE 4-72)
DIGITAL EFFECT MODEL
COLOR EVF MODEL
RGB DECODER D/A CONV
IC800
EXCEPT DIGITAL EFFECT MODEL
CONTINUED ON PAGE 3-9
IC129
IC130
PJ-80 BOARD (1/3)
(SEE PAGE 4-65)
J181 (1/2)
Hi 8 MODEL
B/W EVF MODEL
(SEE PAGE 3-40)
(SEE PAGE 3-41)
COLOR EVF MODEL
(SEE PAGE 3-37)
IR TRANSMITTER MODEL
(SEE PAGE 3-26)
LCD
(SEE PAGE 3-28, 31)
(SEE PAGE 3-34)
NTSC MODEL
BURST LOCK
(VTR REC MODEL)
(COLOR EVF MODEL)
X1601
X1305
IC203 (26) CAMERA REC
IC203 (34) REC(NTSC)
IC203 (34) REC(PAL)
IC203 (36) PB
IC202 (11) REC/PB
IC202 (12) REC/PB
IC129 (44) REC
IC129 (46) REC(PAL)
IC129 (3) REC/PB
IC129 (5) REC/PB
IC129 (13) REC/PB
IC129 (15) REC/PB
IC129 (55) REC/PB
IC115 (57) CAMERA REC
IC115 (56) CAMERA REC
IC115 (75) CAMERA REC
IC114 (66) CAMERA REC
IC114 (63) CAMERA REC
IC114 (2)-(30) CAMERA REC
IC104 (2)-(5) CAMERA REC
IC704 (82)-(85) CAMERA REC
IC704 (92)-(95) CAMERA REC
IC704 (90) CAMERA REC
IC704 (89) CAMERA REC
IC800 (23) CAMERA REC
IC800 (19) CAMERA REC
IC800 (14) CAMERA REC
IC800 (23) REC/PB
IC800 (19) REC/PB
IC800 (14) REC/PB
IC401 (7)
IC401 (3)(4)
IC401 (1)(2)

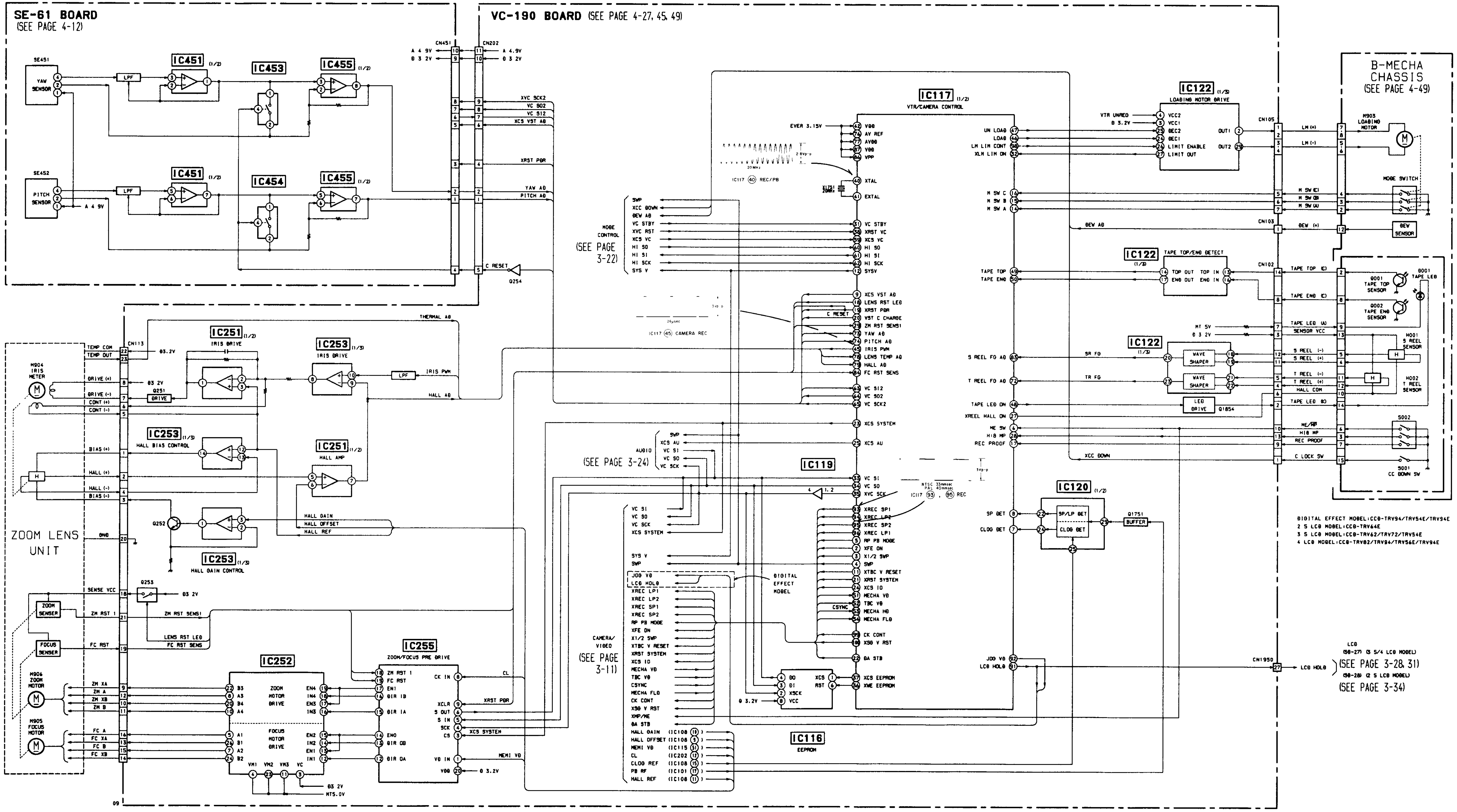
NTSC MODEL:CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL:CCD-TRV54E/TRV56E/TRV64E/TRV94E
IR TRANSMITTER MODEL:CCD-TRV62/TRV72/TRV82
COLOR EVF MODEL:CCD-TRV72/TRV82/TRV94/TRV94E
B/W EVF MODEL:CCD-TRV62/TRV54E/TRV56E/TRV64E
DIGITAL EFFECT MODEL CCD-TRV94/TRV54E/TRV94E
2.5 LCD MODEL:CCD-TRV64E
3.5 LCD MODEL:CCD-TRV62/TRV72/TRV54E
4 LCD MODEL:CCD-TRV82/TRV94/TRV56E/TRV94E
Hi 8 MODEL:CCD-TRV62/TRV72/TRV82/TRV94/TRV64E/TRV94E

3-3. VIDEO/CAMERA 2 BLOCK DIAGRAM


VC-190 BOARD
(SEE PAGE 4-31, 35, 41, 57)
IC106
CHROMA PROCESS
IC105
Y PROCESS
LINE LOCK AFC
IC104
CHARACTER GENERATOR
IC102
Y PROCESS
IC103
IC101
REC/PB AMP
IC108
D/A CONVERTER
EVR
CONTINUED ON PAGE 3-8
VIDEO HEAD
CH LP2
CH LP1
CH SP1
CH SP2
FLYING ERASE
CPC (FOR CHECK)
MODE CONTROL (SEE PAGE 3-22)
AUDIO (SEE PAGE 3-23)
SERVO (SEE PAGE 3-15)
VTR/CAMERA CONTROL (SEE PAGE 3-13)
TIME CODE MODEL
MODE CONTROL (MK-35) (SEE PAGE 3-22)
NTSC MODEL
PAL MODEL
DIGITAL EFFECT MODEL
STANDARD 8 MODEL
Hi 8 MODEL
IC106 ⑭ CAMERA REC
IC106 ⑭ REC
IC106 ⑩ CAMERA REC(NTSC)
IC106 ⑩ CAMERA REC(PAL)
IC106 ⑩ REC/PB
IC101 ⑤ REC/PB
TRIG IC101 ㉑
IC101 ⑰ PB
TRIG IC101 ㉑
IC101 (61) REC
IC105 (69) CAMERA REC
IC105 (69) REC/PB
IC105 ㉟ CAMERA REC
IC106 (40) CAMERA REC
IC106 (47) CAMERA REC
IC106 (46) CAMERA REC
IC106 ㉙ CAMERA REC
CH-1 IC102 ㉒
TRIG IC102 ㉑ REC
IC101 ⑪ PB
TRIG IC101 ㉑
IC101 ③ REC
IC101 (44), (48) REC
IC103 ㉕ REC
IC103 ㉗ PB
IC101 ⑦ PB
IC101 (62) REC
Q1001 Ⓒ REC
IC101 ㉑ REC/PB
IC103 ⑨,⑩ REC/PB
IC103 ⑪,⑫ REC/PB
IC103 ⑬,⑭ REC/PB
IC103 ⑮,⑯ REC/PB

NTSC MODEL:CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL:CCD-TRV54E/TRV56E/TRV64E/TRV94E
TIME CODE MODEL:CCD-TRV94/TRV94E
Hi 8 MODEL:CCD-TRV62/TRV72/TRV82/TRV94/TRV64E/TRV94E
STANDARD 8 MODEL:CCD-TRV54E/TRV56E
DIGITAL EFFECT MODEL:CCD-TRV94/TRV54E/TRV94E

3-4. VTR/CAMERA CONTROL BLOCK DIAGRAM


SE-61 BOARD
(SEE PAGE 4-12)
SE451
YAW SENSOR
SE452
PITCH SENSOR
LPF
IC451 (1/2)
IC453
IC454
IC455 (1/2)
CN451
CN202
A 4.9V
D 3.2V
XVC SCK2
VC SO2
VC SI2
XCS VST AD
XRST PDR
YAW AD
PITCH AD
C RESET
Q254
VC-190 BOARD (SEE PAGE 4-27, 45, 49)
IC117 (1/2)
VTR/CAMERA CONTROL
EVER 3.15V
MODE CONTROL
(SEE PAGE 3-22)
SWP
XCC DOWN
DEW AD
VC STBY
XRST VC
XCS VC
HI SO
HI SI
HI SCK
SYS V
IC117 (40) REC/PB
IC117 (45) CAMERA REC
AUDIO
(SEE PAGE 3-24)
VC SI
VC SO
VC SCK
IC119
IC116
EEPROM
CAMERA/VIDEO
(SEE PAGE 3-11)
DIGITAL EFFECT MODEL
JOD VD
LCD HOLD
CN113
THERMAL AD
IC251 (1/2)
IRIS DRIVE
IC253 (1/3)
IRIS DRIVE
IRIS PWM
HALL AD
Q251
DRIVE
IC253 (1/3)
HALL BIAS CONTROL
IC251 (1/2)
HALL AMP
Q252
IC253 (1/3)
HALL GAIN CONTROL
HALL GAIN
HALL OFFSET
HALL REF
M904
IRIS METER
ZOOM LENS UNIT
ZOOM SENSOR
FOCUS SENSOR
M906
ZOOM MOTOR
M905
FOCUS MOTOR
Q253
SENSE VCC
ZM RST SENS1
LENS RST LED
FC RST SENS
IC252
ZOOM MOTOR DRIVE
FOCUS MOTOR DRIVE
IC255
ZOOM/FOCUS PRE DRIVE
MEMI VD
XCS SYSTEM
IC122 (1/3)
LOADING MOTOR DRIVE
IC122 (1/3)
TAPE TOP/END DETECT
IC122 (1/3)
WAVE SHAPER
LED DRIVE
Q1854
IC120 (1/2)
SP/LP DET
CLOG DET
Q1751
BUFFER
CN105
CN103
CN102
CN1950
B-MECHA CHASSIS
(SEE PAGE 4-49)
M903
LOADING MOTOR
MODE SWITCH
DEW SENSOR
Q001
TAPE TOP SENSOR
Q002
TAPE END SENSOR
D001
TAPE LED
H001
S REEL SENSOR
H002
T REEL SENSOR
S002
S001
CC DOWN SW
LCD
(SEE PAGE 3-28, 31)
(SEE PAGE 3-34)

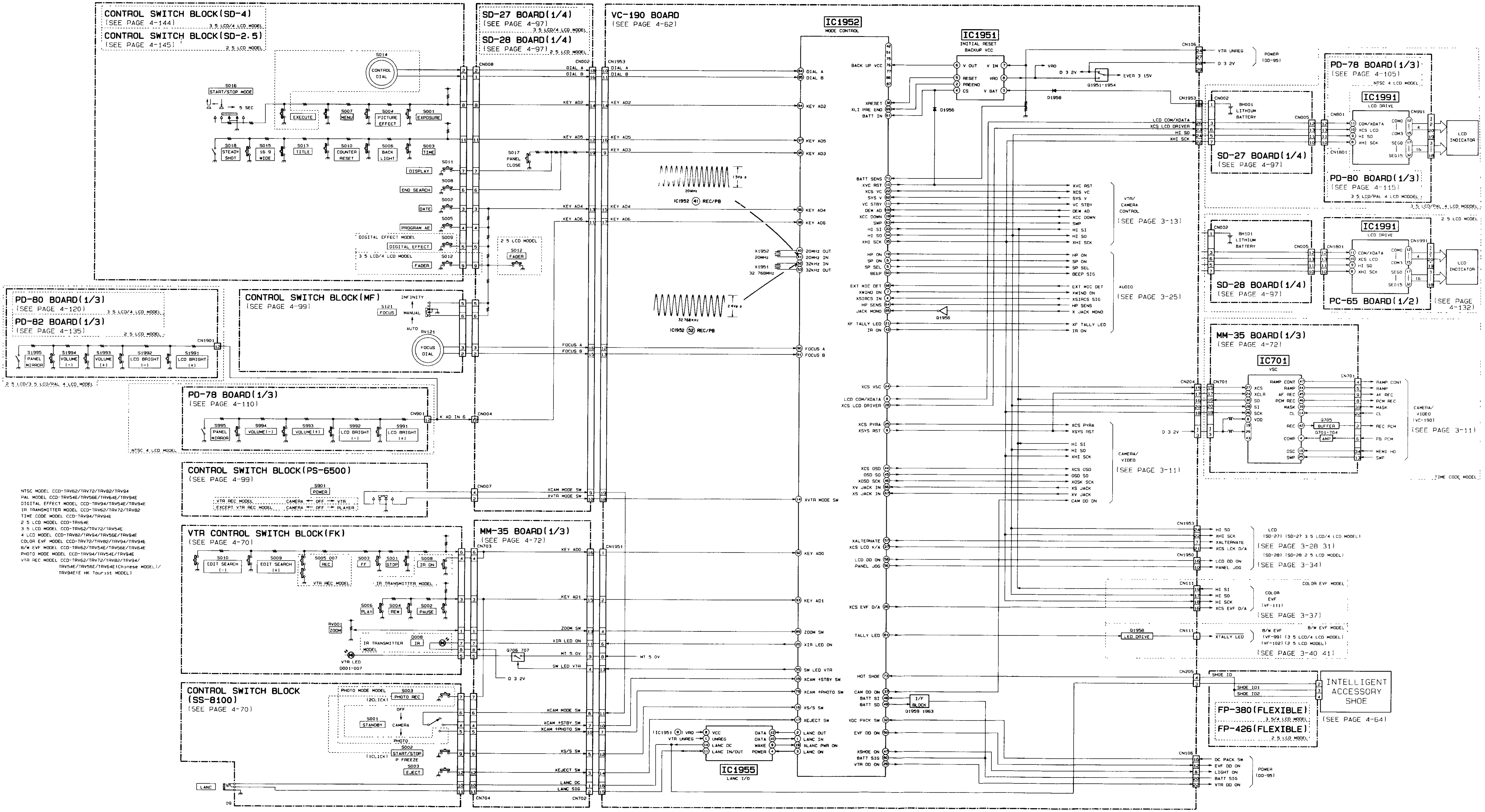
DIGITAL EFFECT MODEL:CCD-TRV94/TRV54E/TRV94E
2 5 LCD MODEL:CCD-TRV64E
3 5 LCD MODEL:CCD-TRV62/TRV72/TRV54E
4 LCD MODEL:CCD-TRV82/TRV94/TRV56E/TRV94E

3-5. SERVO BLOCK DIAGRAM

B-MECHA (1/2)
(SEE PAGE 4-49)
DRUM
FG
PG
D FG
FG/PG COM
D PG
VCC1
CAPSTAN FG
IC001 (2/2)
CFG Vcc
CFG (+)
CFG GND
CFG (-)
CAPSTAN FG WAVE SHAPER
OFFSET ADJ
VC-190 BOARD
(SEE PAGE 4-45, 52)
CN104
CN103
D 3.2V
CAP FG
CFG DUTY
IC108 (21)
CAMERA/VIDEO
(SEE PAGE 3-11)
CN207
CPC
(FOR CHECK)
IC121 (1/2)
DRUM FG/PG WAVE SHAPER
LPF
WAVE SHAPER
V REF
WAVE SHAPER
IC121 (18) REC/PB
IC121 (11) REC/PB
IC117 (1/2)
SERVO
DRUM SERVO
DRUM FG
DRUM PWM
DRUM PG
CAPSTAN SERVO
CAP FG
CAP PWM
REF PILOT
OSCO
OSCI
X1752
11.895MHz
(NTSC)
11.719MHz
(PAL)
ATF ERR AD
VTR/CAMERA CONTROL
CFG HMS
VDD
A VREF
A VDD
VDD
VDD VPP
EVER 3.15V
XCS ATF
VC SO
VC SCK
ATF STBY
DRUM ON
CAP ON
CAP FWD
RP PB MODE
RP PB
ATF 5.9M
IC117 (57) REC/PB
IC117 (44) REC/PB
IC117 (56) REC/PB
IC117 (43) REC/PB
IC117 (58) REC/PB
IC117 (67) REC/PB
IC117 (69) REC/PB
IC122 (1/4)
LPF
PROTECT
0.29V
ATT
Q1851, 1852
BUFFER
CAP ON
DRUM ERROR
CAP ERROR
CN106
IC119
VC SO
VC SCK
IC120 (1/2)
ATF SERVO
REC/PB
REF PILOT
CLK 5.9M
REC ATF
Q1751
BUFF
SPIN
PB RF
LPF. AMP
CS
SIN
SCLK
STBY
MODULATOR
16KHz BPF
46KHz BPF
LPF
DET
V REF
ERR
DVDD
AVDD
D 3.2V
IC120 (13) REC
IC120 (2) PB (PAL)
IC120 (2) PB (NTSC)
IC120 (3) PB (NTSC)
IC120 (3) PB (PAL)
CH1 IC120 (31) PB
CH2 IC102 (3) (TRIG)
DD-95 BOARD
(SEE PAGE 4-163)
CN502
IC501 (1/2)
DRUM/CAPSTAN PWM DRIVE
SHORT CIRCUIT PROTECT
PWM
SWITCHING DRIVE
VTR D/D ON
(CN502 (22))
OSC
OUTPUT VCC 56
MT UNTEG
MT UNREG
Q502 SWITCHING
Q501 SWITCHING
D502
D501
L505
L504
IC501 (64) REC/PB
IC501 (4) REC/PB
DRUM VS
DRUM ON
VTR UNREG
D 3.2V
Vcc 2
Vcc 1
COM
VS
STBY
CONTROL LOGIC
U IN
V IN
W IN
OUTPUT DRIVE BUFFER
OUTPUT DRIVE
I COM
R1851-1853
DRUM DRIVE
CURRENT SENS
IC121 (1/2)
DRUM MOTOR DRIVE
IC121 (1), (2), (29) REC/PB
M901
DRUM MOTOR
CAP VS
VCC 2
STANDBY
CAP FWD
FRC
IC001 (1/2)
CAPSTAN MOTOR DRIVE
Vcc
H1 (+)
H1 (-)
H2 (+)
H2 (-)
H3 (+)
H3 (-)
U IN 1
U IN 2
V IN 1
V IN 2
W IN 1
W IN 2
120° LOGIC
POWER OFF
HE POWER
VH+
VH-
M902
CAPSTAN MOTOR
CAP U
CAP V
CAP W
C HALL Vcc
C HALL GND
09

NTSC MODEL CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL CCD-TRV54E/TRV56E/TRV64E/TRV94E

3-6. MODE CONTROL BLOCK DIAGRAM

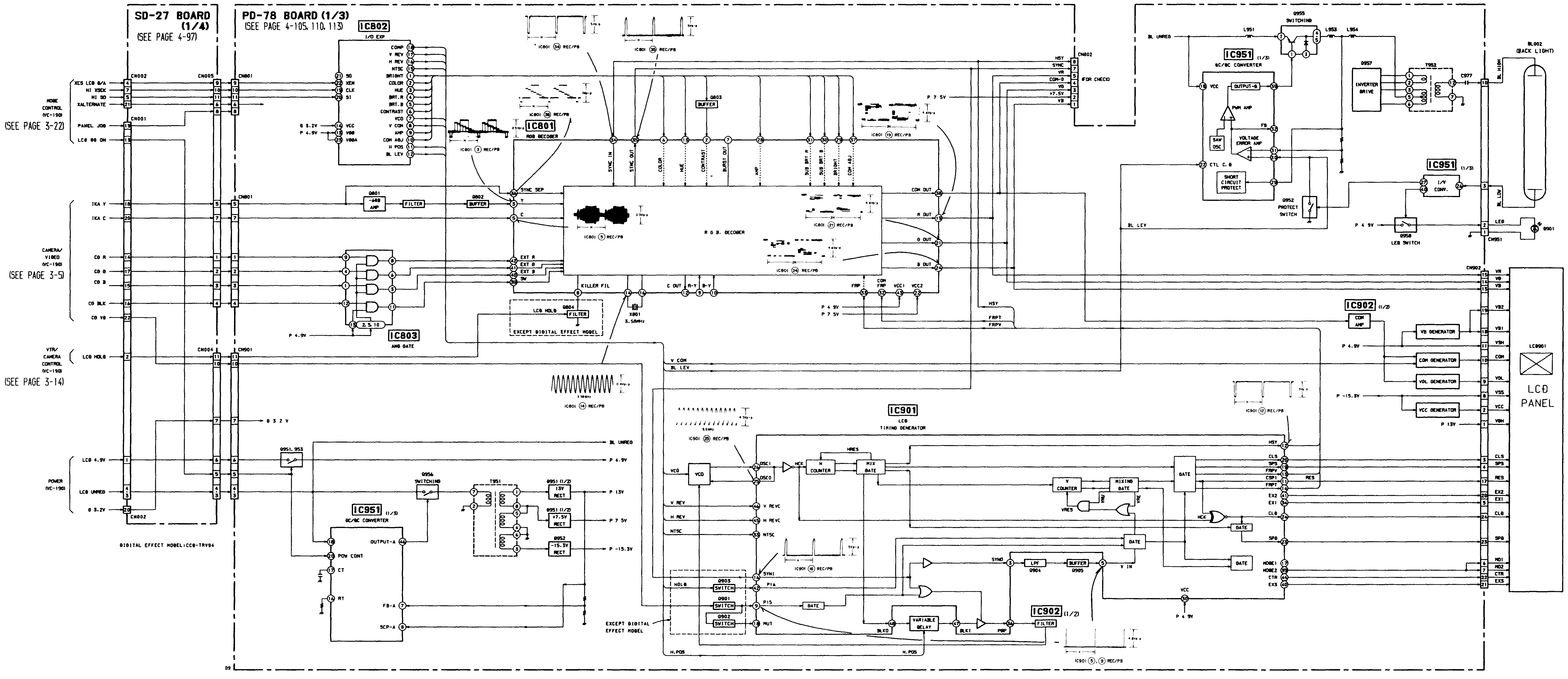

CONTROL SWITCH BLOCK(SD-4) (SEE PAGE 4-144)
CONTROL SWITCH BLOCK(SD-2.5) (SEE PAGE 4-145)
SD-27 BOARD(1/4) (SEE PAGE 4-97)
SD-28 BOARD(1/4) (SEE PAGE 4-97)
VC-190 BOARD (SEE PAGE 4-62)
IC1952 MODE CONTROL
IC1951 INITIAL RESET BACKUP VCC
PD-80 BOARD(1/3) (SEE PAGE 4-120)
PD-82 BOARD(1/3) (SEE PAGE 4-135)
CONTROL SWITCH BLOCK(MF) (SEE PAGE 4-99)
PD-78 BOARD(1/3) (SEE PAGE 4-110)
CONTROL SWITCH BLOCK(PS-6500) (SEE PAGE 4-99)
VTR CONTROL SWITCH BLOCK(FK) (SEE PAGE 4-70)
MM-35 BOARD(1/3) (SEE PAGE 4-72)
CONTROL SWITCH BLOCK (SS-8100) (SEE PAGE 4-70)
IC1955 LANC I/O
PD-78 BOARD(1/3) (SEE PAGE 4-105)
IC1991 LCD DRIVE
LCD INDICATOR
PD-80 BOARD(1/3) (SEE PAGE 4-115)
PC-65 BOARD(1/2) (SEE PAGE 4-132)
IC701 VSC
INTELLIGENT ACCESSORY SHOE (SEE PAGE 4-64)
FP-380(FLEXIBLE)
FP-426(FLEXIBLE)
POWER (DD-95)
VTR/CAMERA CONTROL (SEE PAGE 3-13)
AUDIO (SEE PAGE 3-25)
CAMERA/VIDEO (SEE PAGE 3-11)
LCD (SEE PAGE 3-28 31)
(SEE PAGE 3-34)
COLOR EVF (VF-111) (SEE PAGE 3-37)
B/W EVF (VF-991) (VF-102) (SEE PAGE 3-40 41)

NTSC MODEL CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL CCD-TRV54E/TRV56E/TRV64E/TRV94E
DIGITAL EFFECT MODEL CCD-TRV94/TRV54E/TRV94E
IR TRANSMITTER MODEL CCD-TRV62/TRV72/TRV82
TIME CODE MODEL CCD-TRV94/TRV94E
2 5 LCD MODEL CCD-TRV64E
3 5 LCD MODEL CCD-TRV62/TRV72/TRV54E
4 LCD MODEL CCD-TRV82/TRV94/TRV56E/TRV94E
COLOR EVF MODEL CCD-TRV72/TRV82/TRV94/TRV94E
B/W EVF MODEL CCD-TRV62/TRV54E/TRV56E/TRV64E
PHOTO MODE MODEL CCD-TRV94/TRV54E/TRV94E
VTR REC MODEL CCD-TRV62/TRV72/TRV82/TRV94/
TRV54E/TRV56E/TRV64E(Chinese MODEL)/
TRV94E(E HK Tourist MODEL)

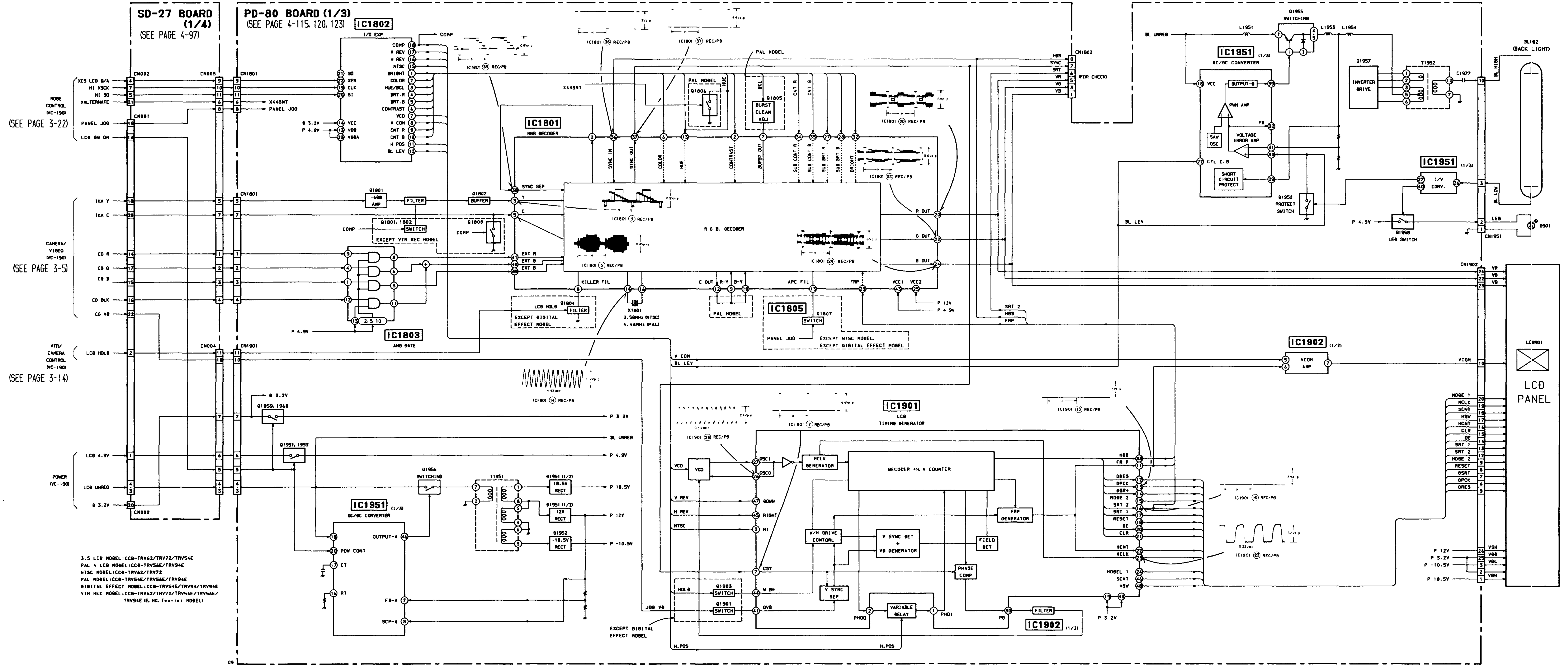
3-7. AUDIO BLOCK DIAGRAM

VC-190 BOARD
(SEE PAGE 4-54, 62)
IC109
AFM PROCESS
CN207
CPC (FOR CHECK)
BPF MON
REC AFM
AU FADE
PB RF
AU BPF
1.5M BEV
REC AFM
FSC
AU XIN/OUT
1.7M BEV
ZOOM CONT
SP VOL
CAMERA/VIDEO
(SEE PAGE 3-11)
BPF
PB 1.5M
PB 1.7M
MOD/DEMOD
NR
MX MTX
AGC
MIC (L)
LINE (L)
MIC (R)
LINE (R)
HP (L)
LINE (L)
LINE HP (R)
Q1491
Q1492
Q1490
Q1489
Q1493, 1494 BUFFER
AU IN/OUT
BUS DECODER
VC SO
XVC SCK
XCS AU
POWER MUTE
Q1486 ON/OFF MUTE SWITCH
AUDIO 4.9V
AU 3.2V
ST/MONO DET
IC109 ㉔ PB
IC109 ㉔ REC
IC109 ③ REC/PB
SWP
VC SI
SWP
XCS AU
VC SI
VC SO
VC SCK
VTR/CAMERA CONTROL
(SEE PAGE 3-13)
CN208
IR AU L
IR AU R
IR ON
FSC
MT 5V
AU 3.2V
MIC L
MIC R
XWIND ON
XMIC MONO
EXT MIC DET
ZOOM MIC CONT
SHOE MIC L
XSIRCS SIG
F TALLY
A 4.9V
MI-27/28 BOARD CN303
IC301
MIC AMP
INT
EXT
5dB AMP
15dB AMP
HPF
ZOOM-STEREO BALANCE
EQ AMP
INV
GAIN CONT
13dB AMP
BUFFER
MIX
INT/EXT
REMOTE COMMANDER RECEIVER
IC302
D304 (TALLY)
MA-298 BOARD CN303
MIC901 MIC L
MIC901 MIC R
MIC902 MIC R
MIC902 MIC R
CN501
CN502
2.5 LCD MODEL
3.5 LCD/4 LCD MODEL
J301 MIC
MI-27 BOARD (SEE PAGE 4-81, 84)
(NTSC 4 LCD MODEL)
MI-28 BOARD (SEE PAGE 4-81, 84)
(3.5 LCD/PAL 4 LCD MODEL)
MA-298 BOARD (SEE PAGE 4-87)
(2.5 LCD MODEL)
CN205
SHOE MIC L
CN1350
XHP SENSE
HEADPHONE R
HEADPHONE L
CN102
CN101
FP-527 (FLEXIBLE)
(SEE PAGE 4-65)
J903 HEADPHONE
PJ-80 BOARD (1/3)
(SEE PAGE 4-65)
CN1550
AUDIO L I/O
AUDIO R I/O
XJACK MONO
AUDIO R (MONO)
AUDIO L
J101 (1/3)
FP-380 (FLEXIBLE)
3.5/4 LCD MODEL
FP-426 (FLEXIBLE)
2.5 LCD MODEL
INTELLIGENT ACCESSORY SHOE
(SEE PAGE 4-64)
CN1950
SD HP L
SD HP R
SP L IN
SP R IN
POW MUTE
SP VOL
SP ON
CN1935
SP SEL
BEEP SIG
HP ON
CN001
CN002
IC001
SPEAKER/HEAD PHONE AMP
Q006
Q005
Q001
Q004
Q003
Q002
HP L
HP R
L HP
R HP
MUTE
SP VOL
SP SEL
XSP ON
BUZZ IN
XHP ON
SP+
SP-
SP VCC
HP VCC
CN003
SP901 SPEAKER
CN004
MT 5.0V
AU 4.9V
POWER (VC-190)
SD-27 BOARD (1/4)
(SEE PAGE 4-97) 3.5/4 LCD MODEL
SD-28 BOARD (1/4)
(SEE PAGE 4-97) 2.5 LCD MODEL
HP ON
SP SEL
SP ON
BEEP SIG
EXT MIC DET
XWIND ON
XSIRCS SIG
HP SENS
JACK MONO
XF TALLY LED
IR ON
XMIC MONO
MODE CONTROL
(SEE PAGE 3-22)
IC361
IR TRANSMITTER
IR VIDEO CAR
IR VIDEO DEV
IR VI
IR AUDI DEV
IR AU L
IR AU R
FSC
IR ON
VIDEO SIGNAL PROCESS
AUDIO SIGNAL PROCESS
HPF
MIX
DRIVE
LED DRIVE
AMP
OSC VCC
STBY
A 4.9V
MT 5V
F361
D362, 364, 365
D362, 363
IC361 ㉒ PB
IC361 ㊶ PB
IC361 ⑯ PB
IC361 ⑮ PB
CN503
IR VI
IR PP
IR BIAS
IR VIDEO DEV
IR VIDEO CAR
IR AUDIO DEV
CAMERA/VIDEO (VC-190)
(SEE PAGE 3-5)
IR TRANSMITTER MODEL
NTSC MODEL:CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL:CCD-TRV54E/TRV56E/TRV64E/TRV94E
2.5 LCD MODEL:CCD-TRV64E
3.5 LCD MODEL:CCD-TRV62/TRV72/TRV54E
4 LCD MODEL:CCD-TRV82/TRV94/TRV56E/TRV94E
IR TRANSMITTER MODEL:CCD-TRV62/TRV72/TRV82
09

3-8. NTSC 4 INCH LCD BLOCK DIAGRAM (CCD-TRV82/TRV94)

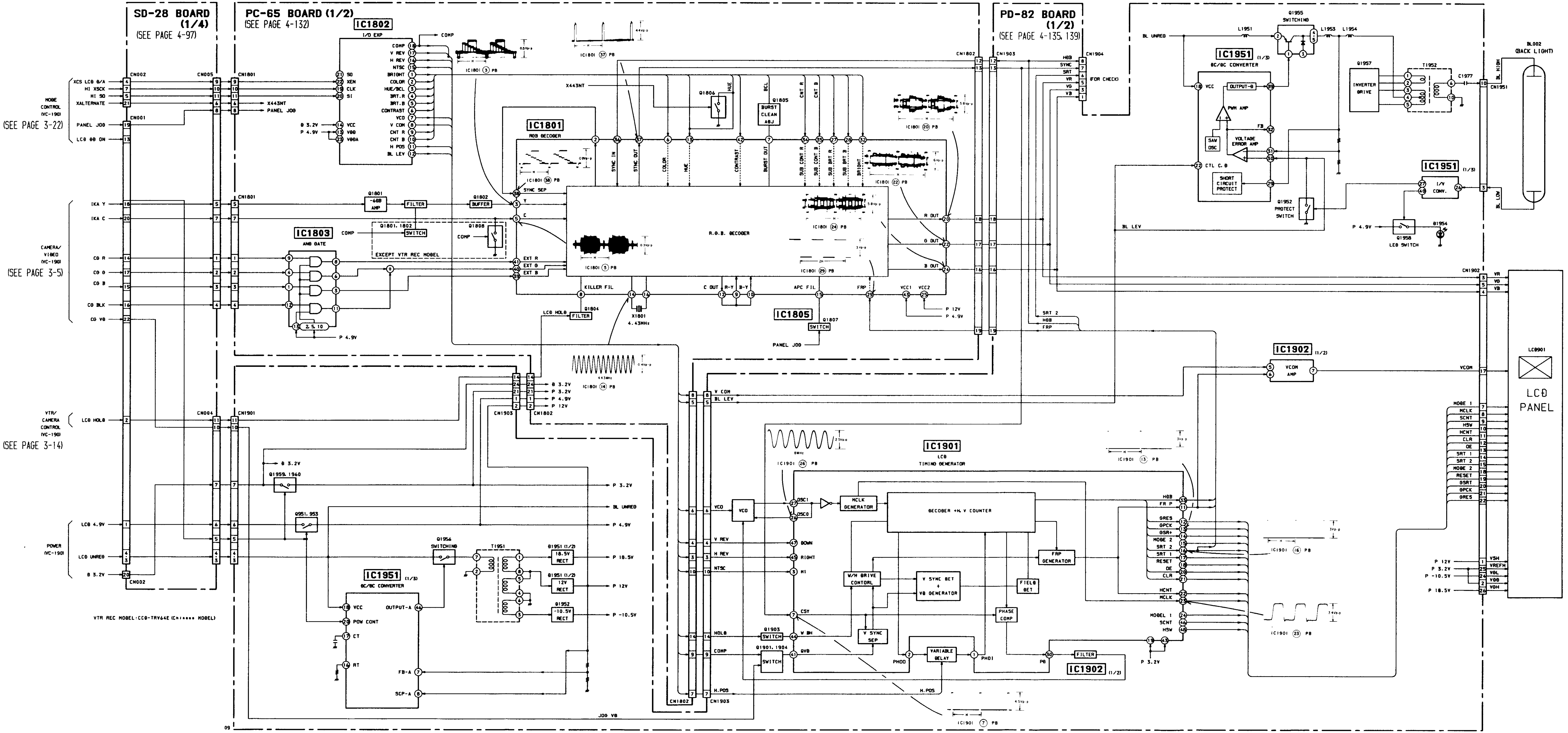

SD-27 BOARD (1/4)
(SEE PAGE 4-97)
PD-78 BOARD (1/3)
(SEE PAGE 4-105, 110, 113)
IC802
I/O EXP
IC801
RGB DECODER
R G B. DECODER
IC803
AND GATE
IC901
LCD TIMING GENERATOR
IC902 (1/2)
IC951 (1/3)
DC/DC CONVERTER
MODE CONTROL (VC-190)
(SEE PAGE 3-22)
CAMERA/VIDEO (VC-190)
(SEE PAGE 3-5)
VTR/CAMERA CONTROL (VC-190)
(SEE PAGE 3-14)
POWER (VC-190)
XCS LCD D/A
HI XSCK
HI SO
XALTERNATE
PANEL JOG
LCD OD ON
IKA Y
IKA C
CD R
CD G
CD B
CD BLK
CD VD
LCD HOLD
LCD 4.9V
LCD UNREG
D 3.2V
CN002
CN005
CN801
CN004
CN901
CN802
CN951
CN902
Q801 -6dB AMP
FILTER
Q802 BUFFER
Q803 BUFFER
Q804 FILTER
LCD HOLD
EXCEPT DIGITAL EFFECT MODEL
X801 3.58MHz
SYNC SEP
SYNC IN
SYNC OUT
COLOR
HUE
CONTRAST
BURST OUT
AMP
SUB BRT.R
SUB BRT.B
BRIGHT
COM ADJ
COM OUT
R OUT
G OUT
B OUT
EXT R
EXT G
EXT B
SW
KILLER FIL
C OUT
R-Y
B-Y
FRP
COM FRP
VCC1
VCC2
HSY
SYNC
VR
COM-O
VG
+7.5V
VB
(FOR CHECK)
P 7.5V
P 4.9V
V COM
BL LEV
BL UNREG
D 3.2V
Q951, 953
Q956 SWITCHING
T951
D951 (1/2) 13V RECT
D951 (1/2) +7.5V RECT
D952 -15.3V RECT
P 13V
P 7.5V
P -15.3V
OUTPUT-A
POW CONT
CT
RT
FB-A
SCP-A
DIGITAL EFFECT MODEL:CCD-TRV94
VCO
OSC1
OSCO
HCK
H COUNTER
HRES
MIX GATE
V COUNTER
MIXING GATE
VRES
GATE
V REV
H REV
NTSC
V REVC
H REVC
SYN1
P16
P15
MUT
HOLD
Q903 SWITCH
Q901 SWITCH
Q902 SWITCH
EXCEPT DIGITAL EFFECT MODEL
SYNO
LPF Q904
BUFFER Q905
V IN
VARIABLE DELAY
BLKO
BLKI
PBP
FILTER
H.POS
CLS
SPS
FRPV
CSP1
FRPT
EX2
EX1
CLD
SPD
MODE1
MODE2
CTR
EX3
RES
Q955 SWITCHING
L951
L953
L954
T952
C977
Q957 INVERTER DRIVE
OUTPUT-B
PWM AMP
SAW OSC
VOLTAGE ERROR AMP
SHORT CIRCUIT PROTECT
CTL C.D
Q952 PROTECT SWITCH
I/V CONV.
Q958 LED SWITCH
D901
ND902 (BACK LIGHT)
BL HIGH
BL LOW
LED
COM AMP
VB GENERATOR
COM GENERATOR
VDL GENERATOR
VCC GENERATOR
LCD901
LCD PANEL
VR
VG
VB
VB2
VB1
VSH
COM
VDL
VSS
VCC
VDH
CLS
SPS
RES
EX2
EX1
CLD
SPD
MD1
MD2
CTR
EX3
IC801 ③ REC/PB
IC801 ⑤ REC/PB
IC801 ⑭ REC/PB
IC801 ⑲ REC/PB
IC801 ㉑ REC/PB
IC801 ㉔ REC/PB
IC801 ㉞ REC/PB
IC801 ㉟ REC/PB
IC801 ㊱ REC/PB
IC901 ⑫ REC/PB
IC901 ⑯ REC/PB
IC901 ㉕ REC/PB
IC901 ⑤, ⑨ REC/PB
3.58MHz
3.5MHz
09

3-9. 3.5 INCH/PAL 4 INCH LCD BLOCK DIAGRAM (CCD-TRV54E/TRV56E/TRV62/TRV72/TRV94E)

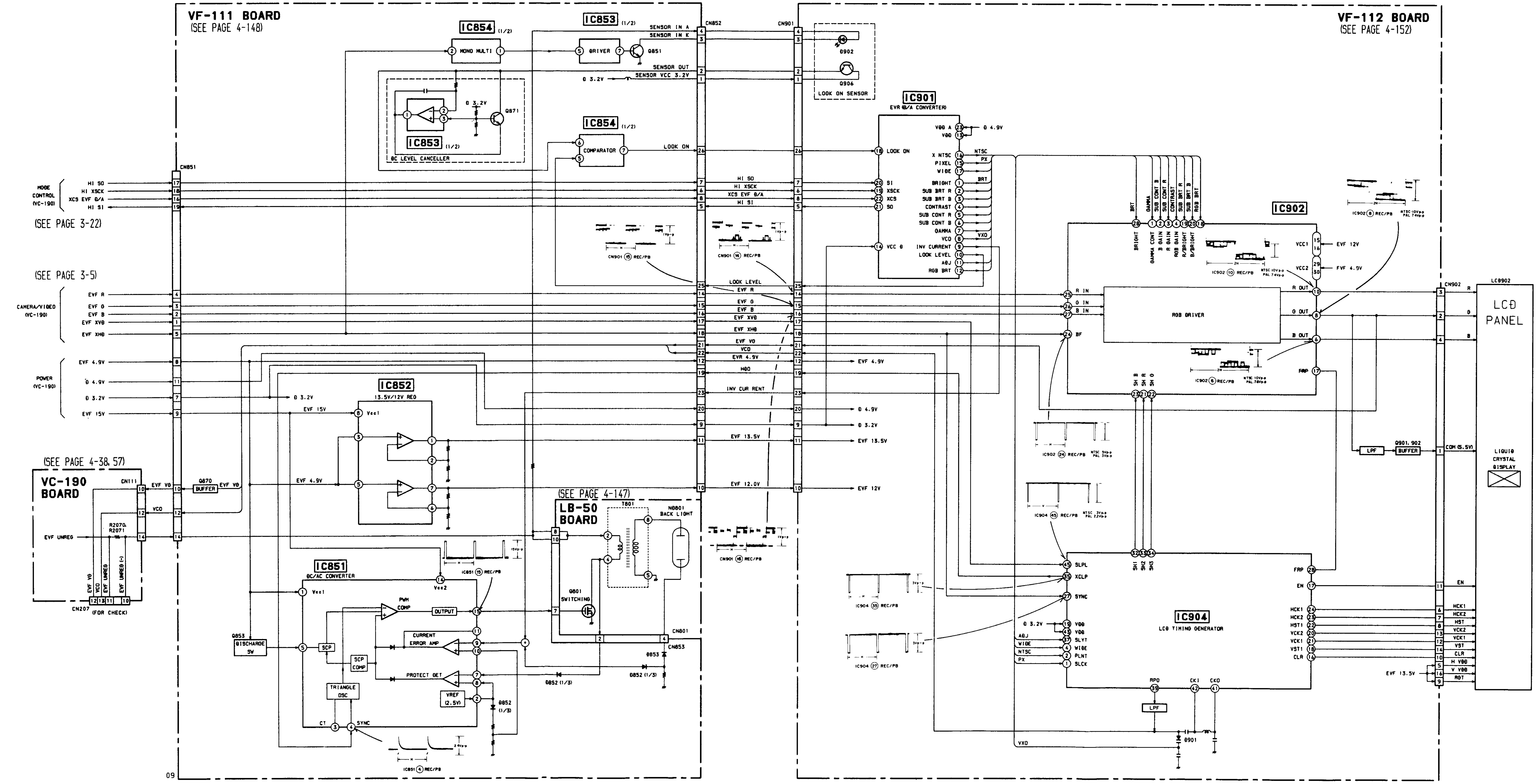

SD-27 BOARD (1/4)
(SEE PAGE 4-97)
PD-80 BOARD (1/3)
(SEE PAGE 4-115, 120, 123)
CN002
CN005
CN1801
CN001
CN004
CN1901
XCS LCD D/A
HI XSCK
HI SO
XALTERNATE
MODE CONTROL (VC-190)
(SEE PAGE 3-22)
PANEL JOG
LCD DD ON
IKA Y
IKA C
CAMERA/ VIDEO (VC-190)
(SEE PAGE 3-5)
CD R
CD G
CD B
CD BLK
CD VD
VTR/ CAMERA CONTROL (VC-190)
(SEE PAGE 3-14)
LCD HOLD
LCD 4.9V
POWER (VC-190)
LCD UNREG
D 3.2V
X443NT
PANEL JOG
IC1802
I/O EXP
SO
XEN
CLK
SI
D 3.2V
P 4.9V
VCC
VDD
VDDA
COMP
V REV
H REV
NTSC
BRIGHT
COLOR
HUE/BCL
BRT.R
BRT.B
CONTRAST
VCO
V COM
CNT R
CNT B
H POS
BL LEV
IC1801 (36) REC/PB
IC1801 (37) REC/PB
IC1801 (38) REC/PB
PAL MODEL
Q1806
HUE
BCL
Q1805
BURST CLEAN ADJ
CNT R
CNT B
IC1801 (20) REC/PB
IC1801 (22) REC/PB
IC1801
RGB DECODER
SYNC IN
SYNC OUT
COLOR
HUE
CONTRAST
BURST OUT
SUB CONT R
SUB CONT B
SUB BRT R
SUB BRT B
BRIGHT
SYNC SEP
Y
C
Q1801
-6DB AMP
FILTER
Q1802
BUFFER
Q1801, 1802
SWITCH
COMP
Q1808
EXCEPT VTR REC MODEL
IC1801 (3) REC/PB
R G B. DECODER
IC1801 (5) REC/PB
IC1801 (24) REC/PB
R OUT
G OUT
B OUT
EXT R
EXT G
EXT B
KILLER FIL
C OUT
R-Y
B-Y
APC FIL
FRP
VCC1
VCC2
P 12V
P 4.9V
LCD HOLD
Q1804
FILTER
EXCEPT DIGITAL EFFECT MODEL
X1801
3.58MHz (NTSC)
4.43MHz (PAL)
PAL MODEL
IC1805
Q1807
SWITCH
PANEL JOG
EXCEPT NTSC MODEL,
EXCEPT DIGITAL EFFECT MODEL
IC1803
AND GATE
P 4.9V
IC1801 (14) REC/PB
4.43MHz
Q1959, 1960
D 3.2V
P 3.2V
BL UNREG
Q1951, 1953
P 4.9V
Q1954
SWITCHING
T1951
D1951 (1/2)
18.5V RECT
D1951 (1/2)
12V RECT
D1952
-10.5V RECT
P 18.5V
P 12V
P -10.5V
IC1951 (1/3)
DC/DC CONVERTER
POW CONT
CT
RT
OUTPUT-A
FB-A
SCP-A
HDG
SYNC
SRT
VR
VG
VB
CN1802
(FOR CHECK)
SRT 2
HDG
FRP
V COM
BL LEV
IC1901 (26) REC/PB
IC1901 (7) REC/PB
IC1901
LCD TIMING GENERATOR
VCO
OSCI
OSCO
MCLK GENERATOR
DECODER +H, V COUNTER
V REV
H REV
NTSC
DOWN
RIGHT
MI
H/H DRIVE CONTROL
V SYNC DET + VD GENERATOR
FIELD DET
FRP GENERATOR
CSY
V SYNC SEP
PHASE COMP
HOLD
Q1903
SWITCH
Q1901
SWITCH
W BH
OVD
EXCEPT DIGITAL EFFECT MODEL
JOG VD
PHOO
VARIABLE DELAY
PHOI
PD
FILTER
IC1902 (1/2)
P 3.2V
H.POS
H.POS
IC1901 (13) REC/PB
IC1901 (16) REC/PB
IC1901 (23) REC/PB
HDB
FR P
DRES
DPCK
DSR+
MODE 2
SRT 2
SRT 1
RESET
OE
CLR
HCNT
MCLK
MODEL 1
SCNT
HSW
BL UNREG
L1951
Q1955
SWITCHING
L1953
L1954
IC1951 (1/3)
DC/DC CONVERTER
VCC
OUTPUT-B
PWM AMP
SAW OSC
VOLTAGE ERROR AMP
FB
CTL C. D
SHORT CIRCUIT PROTECT
Q1957
INVERTER DRIVE
T1952
C1977
BL HIGH
BL LOW
ND1902 (BACK LIGHT)
IC1951 (1/3)
I/V CONV.
Q1952
PROTECT SWITCH
BL LEV
P 4.9V
Q1958
LED SWITCH
LED
D1901
CN1951
CN1902
VR
VG
VB
IC1902 (1/2)
VCOM AMP
VCOM
LCD901
LCD PANEL
MODE 1
MCLK
SCNT
HSW
HCNT
CLR
OE
SRT 1
SRT 2
MODE 2
RESET
DSRT
DPCK
DRES
P 12V
P 3.2V
P -10.5V
P 18.5V
VSH
VDD
VDL
VDH
09

3.5 LCD MODEL: CCD-TRV62/TRV72/TRV54E
PAL 4 LCD MODEL: CCD-TRV56E/TRV94E
NTSC MODEL: CCD-TRV62/TRV72
PAL MODEL: CCD-TRV54E/TRV56E/TRV94E
DIGITAL EFFECT MODEL: CCD-TRV54E/TRV94/TRV94E
VTR REC MODEL: CCD-TRV62/TRV72/TRV54E/TRV56E/
TRV94E (E, HK, Tourist MODEL)

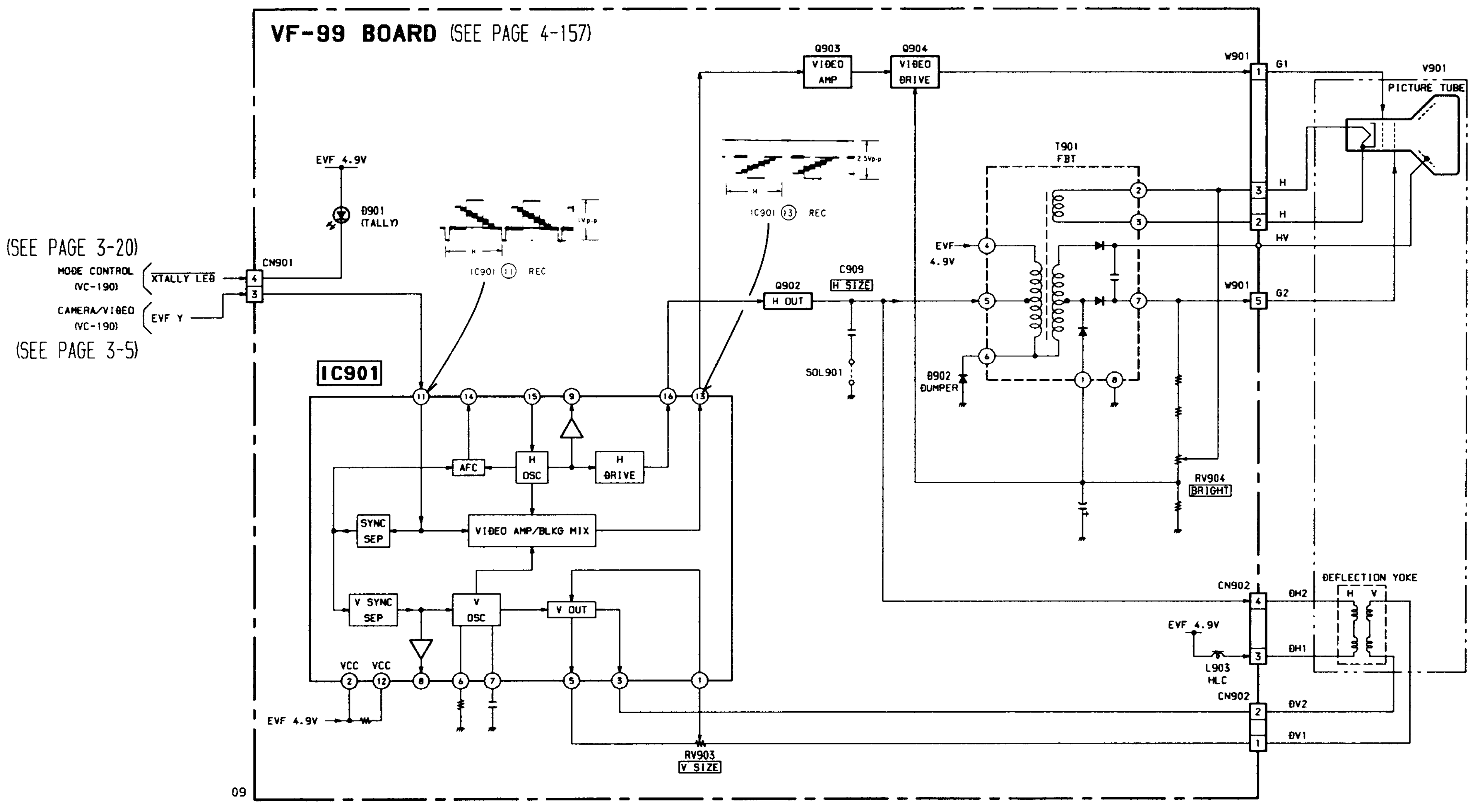
3-10. 2.5 INCH LCD BLOCK DIAGRAM (CCD-TRV64E)


SD-28 BOARD (1/4)
(SEE PAGE 4-97)
PC-65 BOARD (1/2)
(SEE PAGE 4-132)
PD-82 BOARD (1/2)
(SEE PAGE 4-135, 139)
IC1802
I/O EXP
IC1801
RGB DECODER
R.G.B. DECODER
IC1803
AND GATE
IC1805
IC1951
DC/DC CONVERTER
IC1901
LCD TIMING GENERATOR
DECODER +H,V COUNTER
IC1902
VCOM AMP
LCD PANEL
LCD901
BL002 (BACK LIGHT)
MODE CONTROL (VC-190)
(SEE PAGE 3-22)
CAMERA/VIDEO (VC-190)
(SEE PAGE 3-5)
VTR/CAMERA CONTROL (VC-190)
(SEE PAGE 3-14)
POWER (VC-190)
CN002
CN005
CN001
CN004
CN1801
CN1901
CN1802
CN1903
CN1904
CN1902
CN1951
Q1955 SWITCHING
Q1957 INVERTER DRIVE
T1952
Q1952 PROTECT SWITCH
Q1958 LED SWITCH
Q1954
Q1956 SWITCHING
T1951
D1951 (1/2) 15.5V RECT
D1951 (1/2) 12V RECT
D1952 -10.5V RECT
P 15.5V
P 12V
P -10.5V
P 3.2V
BL UNREG
P 4.9V
JOG VD
X1801 4.43MHz
VTR REC MODEL:CCD-TRV64E (Chinese MODEL)

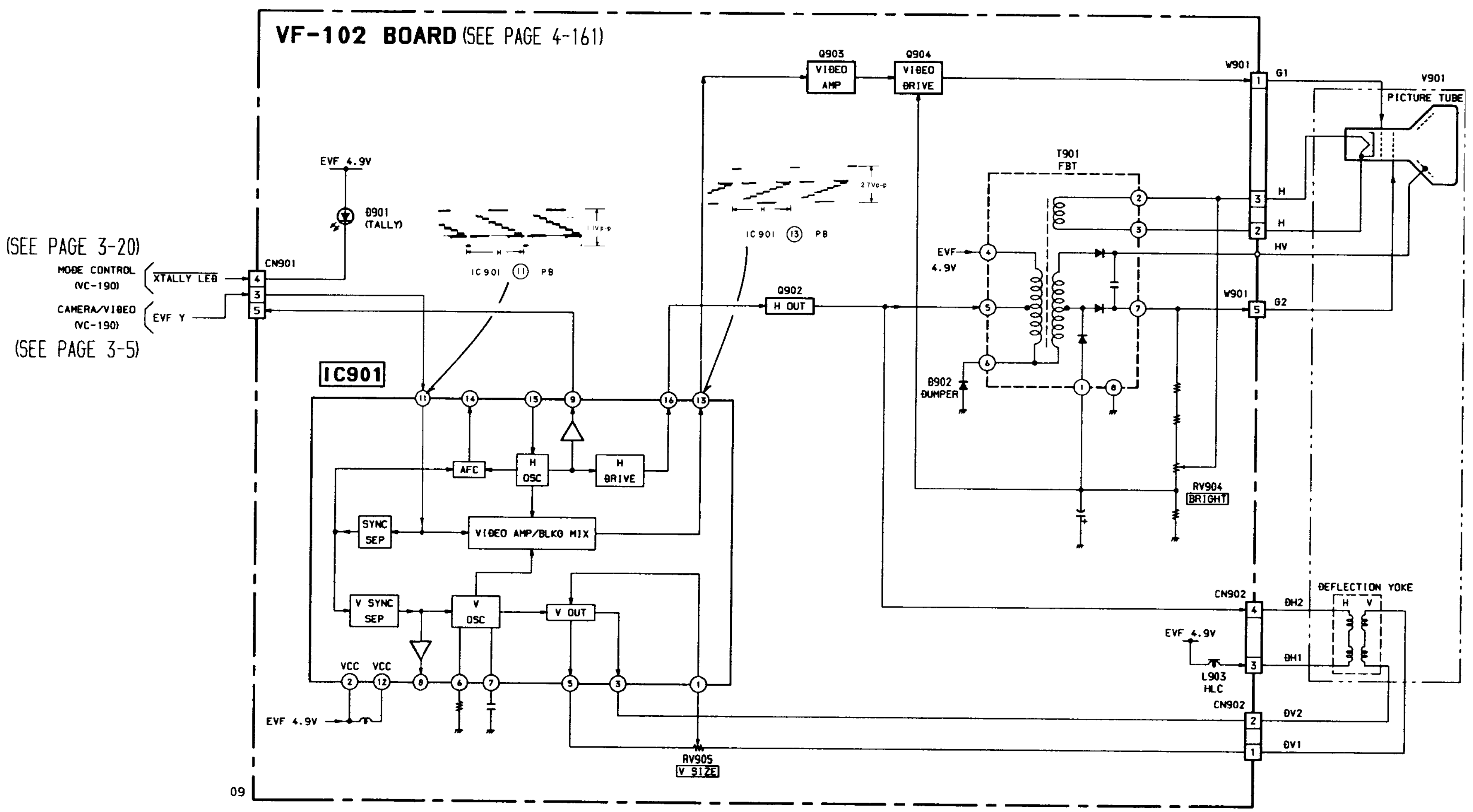
3-11. COLOR EVF BLOCK DIAGRAM (CCD-TRV72/TRV82/TRV94/TRV94E)


VF-111 BOARD
(SEE PAGE 4-148)
VF-112 BOARD
(SEE PAGE 4-152)
VC-190 BOARD
(SEE PAGE 4-38, 57)
LB-50 BOARD
(SEE PAGE 4-147)
(SEE PAGE 3-22)
(SEE PAGE 3-5)
MODE CONTROL (VC-190)
CAMERA/VIDEO (VC-190)
POWER (VC-190)
HI SO
HI XSCK
XCS EVF D/A
HI SI
EVF R
EVF G
EVF B
EVF XVD
EVF XHD
EVF 4.9V
D 4.9V
D 3.2V
EVF 15V
IC854 (1/2)
MONO MULTI
IC853 (1/2)
DRIVER
Q851
DC LEVEL CANCELLER
Q871
IC854 (1/2)
COMPARATOR
SENSOR IN A
SENSOR IN K
SENSOR OUT
SENSOR VCC 3.2V
LOOK ON
LOOK LEVEL
EVF VD
VCO
EVR 4.9V
HBD
INV CUR RENT
EVF 13.5V
EVF 12.0V
CN851
CN852
CN901
CN111
CN207 (FOR CHECK)
R2070, R2071
EVF UNREG
Q870
BUFFER
IC852
13.5V/12V REG
IC851
DC/AC CONVERTER
PWM COMP
OUTPUT
SCP
SCP COMP
TRIANGLE OSC
CURRENT ERROR AMP
PROTECT DET
VREF (2.5V)
Q853 DISCHARGE SW
D852 (1/3)
D853
CN801
CN853
T801
N8601 BACK LIGHT
Q801 SWITCHING
D902
D906
LOOK ON SENSOR
IC901
EVR (D/A CONVERTER)
VDD A
VDD
X NTSC
PIXEL
WIDE
BRIGHT
SUB BRT R
SUB BRT B
CONTRAST
SUB CONT R
SUB CONT B
GAMMA
VCO
INV CURRENT
LOOK LEVEL
ADJ
RGB BRT
IC902
RGB DRIVER
R IN
G IN
B IN
BF
R OUT
G OUT
B OUT
FRP
VCC1
VCC2
EVF 12V
EVF 4.9V
IC904
LCD TIMING GENERATOR
SLPL
XCLP
SYNC
VDD
SLYT
WIDE
PLNT
SLCK
RPO
CKI
CKO
EN
HCK1
HCK2
HST1
VCK2
VCK1
VST1
CLR
LPF
D901
Q901, 902 BUFFER
COM (5.5V)
CN902
LCD902
LCD PANEL
LIQUID CRYSTAL DISPLAY
H VDD
V VDD
RGT
EVF 13.5V
CN901 (15) REC/PB
CN901 (14) REC/PB
CN901 (16) REC/PB
IC851 (15) REC/PB
IC851 (4) REC/PB
IC902 (24) REC/PB
IC902 (10) REC/PB
IC902 (8) REC/PB
IC902 (6) REC/PB
IC904 (45) REC/PB
IC904 (35) REC/PB
IC904 (27) REC/PB
NTSC 10Vp-p PAL 7.4Vp-p
1Vp-p
15Vp-p
3Vp-p
2.4Vp-p
09

3-12. B/W EVF 1 BLOCK DIAGRAM (CCD-TRV54E/TRV56E/TRV62)


VF-99 BOARD (SEE PAGE 4-157)
(SEE PAGE 3-20)
MODE CONTROL (VC-190)
XTALLY LED
CAMERA/VIDEO (VC-190)
EVF Y
(SEE PAGE 3-5)
CN901
EVF 4.9V
D901 (TALLY)
IC901 ⑪ REC
1Vp-p
H
IC901 ⑬ REC
2.5Vp-p
Q903 VIDEO AMP
Q904 VIDEO DRIVE
W901
G1
V901
PICTURE TUBE
T901 FBT
H
H
HV
EVF 4.9V
Q902 H OUT
C909 H SIZE
SOL901
D902 DUMPER
W901
G2
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/BLKG MIX
V SYNC SEP
V OSC
V OUT
VCC
VCC
EVF 4.9V
RV903 V SIZE
RV904 BRIGHT
CN902
DH2
DEFLECTION YOKE
H V
EVF 4.9V
L903 HLC
DH1
CN902
DV2
DV1
09

3-13. B/W EVF 2 BLOCK DIAGRAM (CCD-TRV64E)


VF-102 BOARD (SEE PAGE 4-161)
(SEE PAGE 3-20)
MODE CONTROL (VC-190)
XTALLY LED
CAMERA/VIDEO (VC-190)
EVF Y
(SEE PAGE 3-5)
CN901
EVF 4.9V
D901 (TALLY)
IC901 ⑪ PB
1.1Vp-p
H
IC901 ⑬ PB
2.7Vp-p
Q903 VIDEO AMP
Q904 VIDEO DRIVE
W901
G1
V901
PICTURE TUBE
T901 FBT
H
H
HV
EVF 4.9V
Q902 H OUT
D902 DUMPER
W901
G2
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/BLKG MIX
V SYNC SEP
V OSC
V OUT
VCC
VCC
EVF 4.9V
RV905 V SIZE
RV904 BRIGHT
CN902
DH2
DEFLECTION YOKE
H V
EVF 4.9V
L903 HLC
DH1
CN902
DV2
DV1
09

3-14. POWER BLOCK DIAGRAM

NTSC MODEL· CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL CCD-TRV54E/TRV56E/TRV64E/TRV94E
COLOR EVF MODEL CCD-TRV72/TRV82/TRV94/TRV94E
B/W EVF MODEL·CCD-TRV62/TRV54E/TRV56E/TRV64E
IR TRANSMITTER MODEL CCD-TRV62/TRV72/TRV82
2.5 LCD MODEL CCD-TRV64E
3.5 LCD MODEL CCD-TRV62/TRV72/TRV54E
4 LCD MODEL CCD-TRV82/TRV94/TRV56E/TRV94E
VTR REC MODEL CCD-TRV62/TRV72/TRV82/TRV94/TRV54E/TRV56E/
TRV64E(Chinese MODEL)/TRV94E(E.HK Tourist MODEL)
TIME CODE MODEL CCD-TRV94/TRV94E
DIGITAL EFFECT MODEL CCD-TRV94/TRV54E/TRV94E
PHOTO MODE MODEL CCD-TRV94/TRV54E/TRV94E

J901 BATTERY TERMINAL
BATT(+)
BATT SW(+)
BATT SW(-)
BATT(-)
BATT SIG
DD-95 BOARD (SEE PAGE 4-163)
IC501 (1/2) DC/DC CONVERTER
OUTPUT-1
OUTPUT-4
OUTPUT-3
OUTPUT-2
OUTPUT VCC 13
OUTPUT VCC 24
OUTPUT VCC 56
COMP
FB1
FB2
FB3
FB4
VCC
CT
RT
STBY
VREF
DRUM/CAPSTAN PWM DRIVE
Q503 SWITCHING
Q504 SWITCHING
Q505 SWITCHING
Q506 SWITCHING
Q507 SWITCHING
Q508 -7.5V REG
Q509-512 -7.5V REG
Q513 EMERGENCY DETECT
Q514
Q515
Q517 518
Q519-521
Q501,502 DRUM VS CAP VS SWITCHING
T501
EMERGENCY DETECT
COLOR EVF MODEL
PS505 LCD UNREG
PS504 LIGHT UNREG
PS503 MT UNREG
PS502 VTR UNREG1
PS501 VTR UNREG2
DC PACK SW
BATT SIG
VTR UNREG
EVF UNREG
LIGHT UNREG
XLIGHT ON
MT 5V
A 3.2V
D 3.2V
AUDIO 3.2V
CAM -7.5V
CAM 15V
AUDIO 4.9V
RP 4.9V
A 4.9V
SW EVF 4.9V
SW EVF 15V
VTR DD ON
EVF DD ON
LCD UNREG
LCD 4.9V
CN501
CN502
INTELLIGENT ACCESSORY SHOE
SHOE UNREG
VC-190 BOARD (SEE PAGE 4-21,24,27,31,35,38,41,45,49,54,57,62)
CN205
CN106
Q1501-1504
CAM -7.5V
CAM 15V
CD-166 BOARD (SEE PAGE 4-10)
IC401 CCD IMAGER
IRIS METER
DRIVE(+)
CAM DD ON
IC251,253 IRIS DRIVE HALL AMP
IC252,255 ZOOM/FOCUS DRIVE
IC104 CHARACTER GENERATOR
IC800 RGB DECODER D/A CONVERTER
IC116 EEPROM
IC202 TIMING GENERATOR
IC115 CAMERA Y/C PROCESS
IC114 ZOOM TBC CNR PROCESS
IC105 Y PROCESS
IC102 MOD/DEMOD EMPH/DEEMPH D/A CONV.
IC117 MECHA/CAMERA/SERVO CONTROL
IC109 AFM PROCESS
IC203 S/H AGC A/D CONVERTER
IC106 C PROCESS
IC103 A/D CONVERTER
IC120 ATF SERVO
IC108 D/A CONVERTER (EVR)
IC129 VIDEO I/O AMP
IC122 LOADING MOTOR DRIVE, SENSOR AMP
IC121 DRUM MOTOR DRIVE
IC101 REC/PB AMP
B-MECHA (SEE PAGE 4-49)
T REEL S REEL SENSOR
H001 H002
CAPSTAN MOTOR
M902
VIDEO HEAD
PJ-80 BOARD (SEE PAGE 4-65)
Q101,102 CURRENT LIMITER
EVER 4.9V
J101(1/3) RFU DC OUT
SE-61 BOARD (SEE PAGE 4-12)
IC451-455 YAW/PITCH SENSOR AMP
MA-298 BOARD (SEE PAGE 4-87)
IC301 MIC AMP
IC302 REMOTE COMMANDER RECEIVER
2.5 LCD MODEL
MI-27 BOARD (SEE PAGE 4-81,84)
MI-28 BOARD (SEE PAGE 4-81,84)
IR TRANSMITTER MODEL
IC361 IR TRANSMITTER
IC301 MIC AMP
IC302 REMOTE COMMANDER RECEIVER
IR LED
CPC (FOR CHECK)
COLOR EVF MODEL
VF-99 BOARD (SEE PAGE 4-157)
VF-102 BOARD (SEE PAGE 4-161)
B/W EVF MODEL
CRT DRIVE
IC901
LB-50 BOARD (SEE PAGE 4-147)
Q801,T801 INVERTER DC/AC CONVERTER
HIGH
ND801 BACK LIGHT
VF-112 BOARD (SEE PAGE 4-152)
LOOK ON SENSOR
IC901 D/A CONVERTER (EVR)
RGB DECODER
IC902
TIMING GENERATOR
IC904
LCD902 LCD PANEL
VF-111 BOARD (SEE PAGE 4-148)
IC851 DC/AC CONV
IC852 13.5V/12V REG
POWER SAVE
IC853-854
SENSOR IN A
MM-35 BOARD (SEE PAGE 4-72)
IC701 VSC
IC704 MEMORY CONTROL
IC702 MEMORY
PCM AMP
Q701-705
Q706,707
DIGITAL EFFECT MODEL
TIME CODE MODEL
VTR CONTROL SWITCH BLOCK (FK) (SEE PAGE 4-70)
VTR FUNCTION SW ZOOM SW
VTR LED
CONTROL SWITCH BLOCK (SS-8100) (SEE PAGE 4-70)
STANDBY OFF CAMERA
PHOTO
PHOTO MODE MODEL
LANC
CONTROL SWITCH BLOCK (SD-4)(SD-2.5) (SEE PAGE 4-144,145)
FUNCTION SW
FOCUS DIAL
CONTROL SWITCH BLOCK (SEE PAGE 4-99) (MF)
CONTROL SWITCH BLOCK (PS-6500) (SEE PAGE 4-99)
S100 POWER
VTR ← OFF → CAMERA
VTR REC MODEL
PLAYER ← OFF → CAMERA
EXCEPT VTR REC MODEL
IC1951 INITIAL RESET, BACKUP VCC
Q1951-1955
IC1955 LANC I/O
IC1952 MODE CONTROL
XDC PACK SW
BATT SIG
XSHOE ON
XVTR DD ON
EVF DD ON
CAM DD ON
SW LED VTR
BACKUP VCC
LCD DD ON
XVTR MODE SW
XCAM STBY SW
XCAM PHOTO SW
BH001 LITHIUM BATTERY
IC001 SPEAKER HEADPHONE AMP
SD-28 BOARD
SD-27 BOARD
(SEE PAGE 4-97)
PD-78 BOARD (SEE PAGE 4-105,110,113)
IC991 LCD INDICATOR DRIVE
IC803 AND GATE
IC802 D/A CONVERTER (EVR)
IC801 RGB DECODER
IC901 TIMING GENERATOR
IC902 COM AMP
IC951 DC/DC CONVERTER
Q957-1952 INVERTER DC/AC CONVERTER
BL002 BACK LIGHT
LCD901 LCD PANEL
NTSC 4 LCD MODEL
PC-65 BOARD (SEE PAGE 4-132)
IC991 LCD INDICATOR DRIVE
IC1803 AND GATE
IC1802 D/A CONVERTER (EVR)
IC1801 RGB DECODER
IC1901 TIMING GENERATOR
PD-82 BOARD (SEE PAGE 4-135,139)
IC1951
IC1902 COM AMP
Q1957-1952 INVERTER DC/AC CONVERTER
2.5 LCD MODEL
PD-80 BOARD (SEE PAGE 4-115,120,123)
IC991 IC1803 IC1802 IC1801 IC1901
IC1951
IC1902
3.5 LCD/PAL 4 LCD MODEL

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

FRAME SCHEMATIC DIAGRAM

CD-166 BOARD
LENS
VC-190 BOARD
SE-61 BOARD
INTELLIGENT ACCESSORY SHOE
PJ-80 BOARD
MI-27 BOARD
MI-28 BOARD
FP-523
FP-524
FP-377
FP-380
FP-426
FP-516
FP-527
FP-512
FP-515
BL002 BACK LIGHT
LCD901
PD-78 BOARD
PD-80 BOARD
PD-82 BOARD
FP-529
PC-65 BOARD
CONTROL SWITCH BLOCK(SD-2.5)
CONTROL SWITCH BLOCK(SD-4)
HARNESS
CONTROL SWITCH BLOCK(MF-7800)
CONTROL SWITCH BLOCK(PS-6500)
SP901 SPEAKER
SD-27 BOARD
SD-28 BOARD
BH001 LITHIUM BATTERY HOLDER
FP-503
FP-502
CPC
FOR CHECK
MA-298 BOARD
M903 LOADING MOTOR
FP-220
VIDEO HEAD
B-MECHA
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
FP-248
FP-221
FP-249
FP-355
FP-356
MIC901
MIC902
FP-395
FP-509
FP-385
MM-35 BOARD
DD-95 BOARD
J901 BATTERY TERMINAL
VF-111 BOARD
FP-530
VF-112 BOARD
LCD902 COLOR LCD UNIT
LB-50 BOARD
ND801 BACK LIGHT
VF-99 BOARD
VF-102 BOARD
V901 CRT ASSY
VTR CONTROL SWITCH BLOCK(FK)
CONTROL SWITCH BLOCK(SS-8100)
LOCK
STANDBY
PHOTO STANDBY

2.5 INCH LCD MODEL·CCD-TRV64E
3.5 INCH LCD MODEL CCD-TRV62/TRV72/TRV54E
4 INCH LCD MODEL:CCD-TRV82/TRV94/TRV56E/TRV94E
NTSC 4 INCH LCD MODEL:CCD-TRV82/TRV94
PAL 4 INCH LCD MODEL:CCD-TRV56E/TRV94E
DIGITAL EFFECT MODEL:CCD-TRV94/TRV54E/TRV94E
VTR REC MODEL:CCD-TRV62/TRV72/TRV82/TRV94/TRV54E/TRV56E/
TRV64E(EXCEPT AEP.UK MODEL)/TRV94E(EXCEPT AEP.UK MODEL)
PLAYER MODEL·CCD-TRV64E(AEP UK MODEL)/TRV94E(AEP UK MODEL)
PAL MODEL CCD-TRV54E/TRV56E/TRV64E/TRV94E
NTSC MODEL CCD-TRV62/TRV72/TRV82/TRV94
IR TRANSMITTER MODEL:CCD-TRV62/TRV72/TRV82
PHOTO MODE MODEL·CCD-TRV94/TRV54E/TRV94E
B/W EVF MODEL 1:CCD-TRV62/TRV54E/TRV56E
B/W EVF MODEL 2:CCD-TRV64E
COLOR EVF MODEL·CCD-TRV72/TRV82/TRV94/TRV94E
TBC&DNR MODEL·EXCEPT CCD-TRV54E/TRV56E

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

• For printed wiring boards.

- ▨ : Pattern from the side which enable seeing.
  (The other layer's patterns are not indicated.)
- Circled numbers refer to waveforms.
- (B) or (F), etc. of capacitors indicate the temperature characteristics.
- Through hole is omitted.

• For schematic diagrams.

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
  Chip resistor are 1/16W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50 V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊞ : nonflammable resistor.
- ▭ : panel designation.
- △ : internal component.
- The constant such as resistor, condensor and etc. shown with XX means not used.
- ▭ : adjustment for repeair.
- ▬ : B+ Line
- ▪▪▪▪ : B− Line
- ⇨ : IN/OUT direction of (+, −) B LINE.
- Circled numbers refer to waveforms.

The components identified by mark ⚠or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

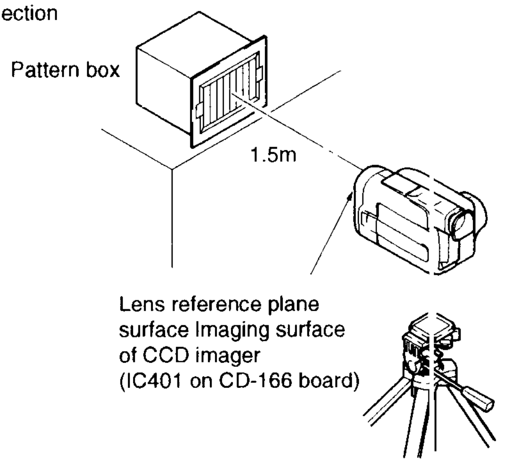
When indicating parts by reference number, please include the board name.

Refer to page 3 as for "Table for difference of functions" of models and classification.

• Measuring conditions voltage value and waveform.
(CAMERA block)

- The object is color bar chart of pattern box.
- Voltages and dc between ground and measurement points.
  Readings are taken with a digital multimeter (DC 10 MΩ).
- Voltages variations may be noted due to normal production tolerances.

1.Connection



2.Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

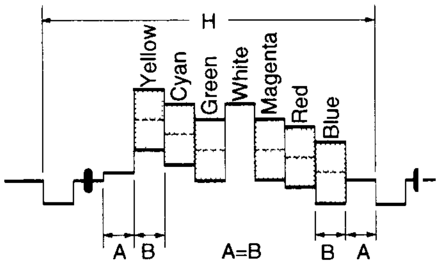


Fig. a (Video output terminal output waveform)

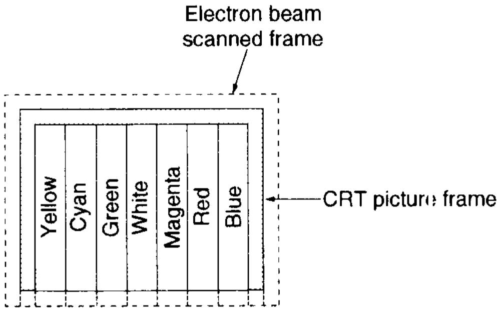


Fig. b (Picture on monitor TV)

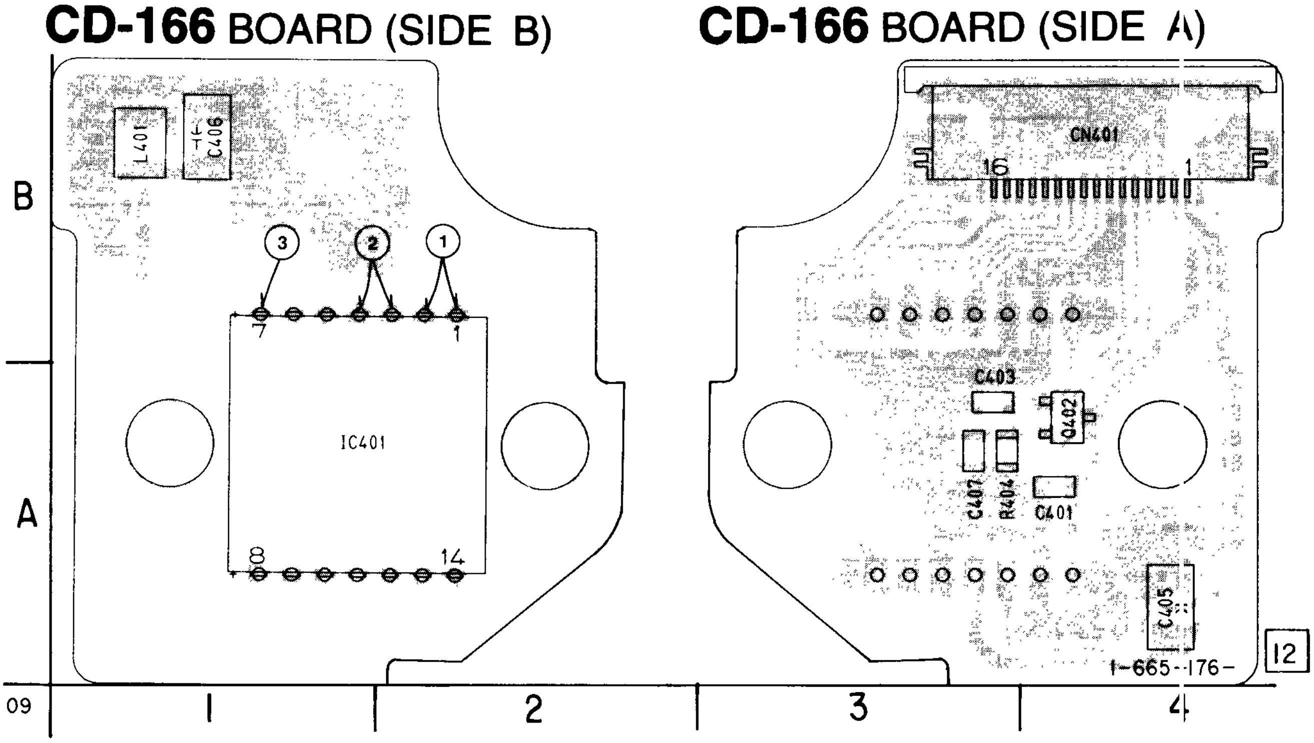
(VIDEO, SERVO/SYSTEM CONTROL, MODE CONTROL, AUDIO, LCD, EVF)

- Voltages and dc between ground and measurement points
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC 10MΩ).
- Voltages variations may be noted due to normal production tolerances.

Note : Refer "3-1-6. How to set the REC Mode" in the model without REC switch (TYPE G/TYPE I) in VIDEO SECTION ADJUSTMENT. (See page 5-68)

CD-166 (CCD IMAGER) PRINTED WIRING BOARD

– Ref No. CD-166 BOARD: 3,000 series –

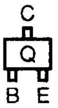

CD-166 BOARD (SIDE B)   CD-166 BOARD (SIDE A)
B
A
L401
C406
3
2
1
7
1
IC401
8
14
CN401
16
1
C403
Q402
C407
R404
C401
C405
1-665-176-
12
09
1
2
3
4

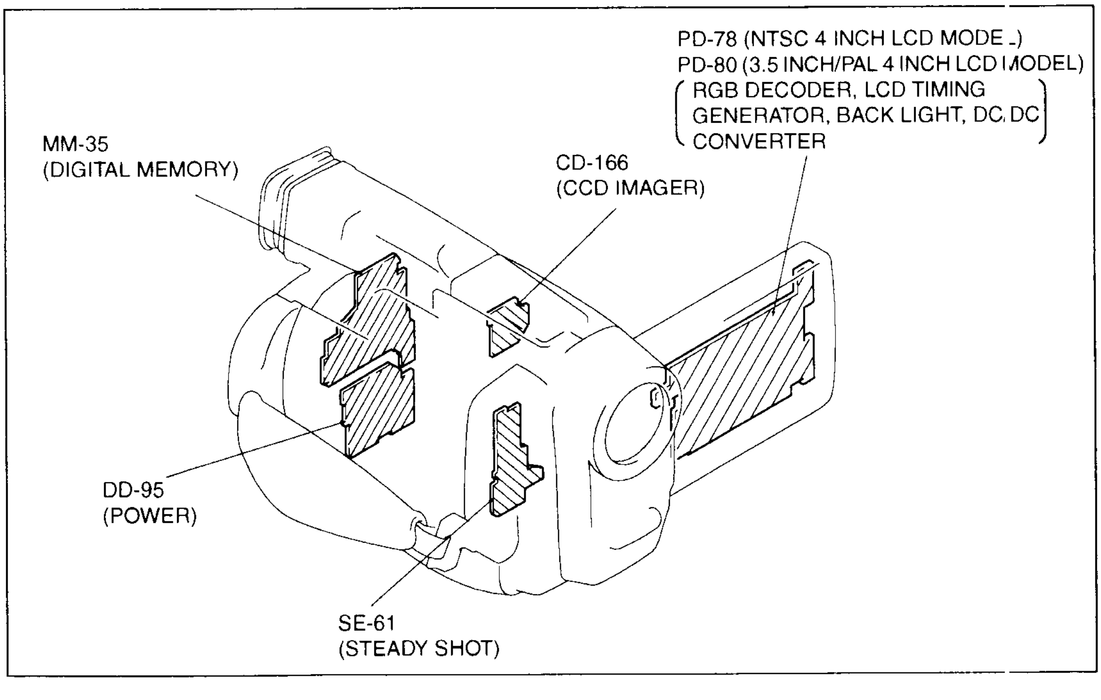
CD-166 BOARD	
C401	A-4
C403	A-3
C405	A-4
C406	B-1
C407	A-3
CN401	B-4
IC401	A-1
L401	B-1
Q402	A-4
R404	A-3

- **For Printed Wiring Boards.**

> There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor

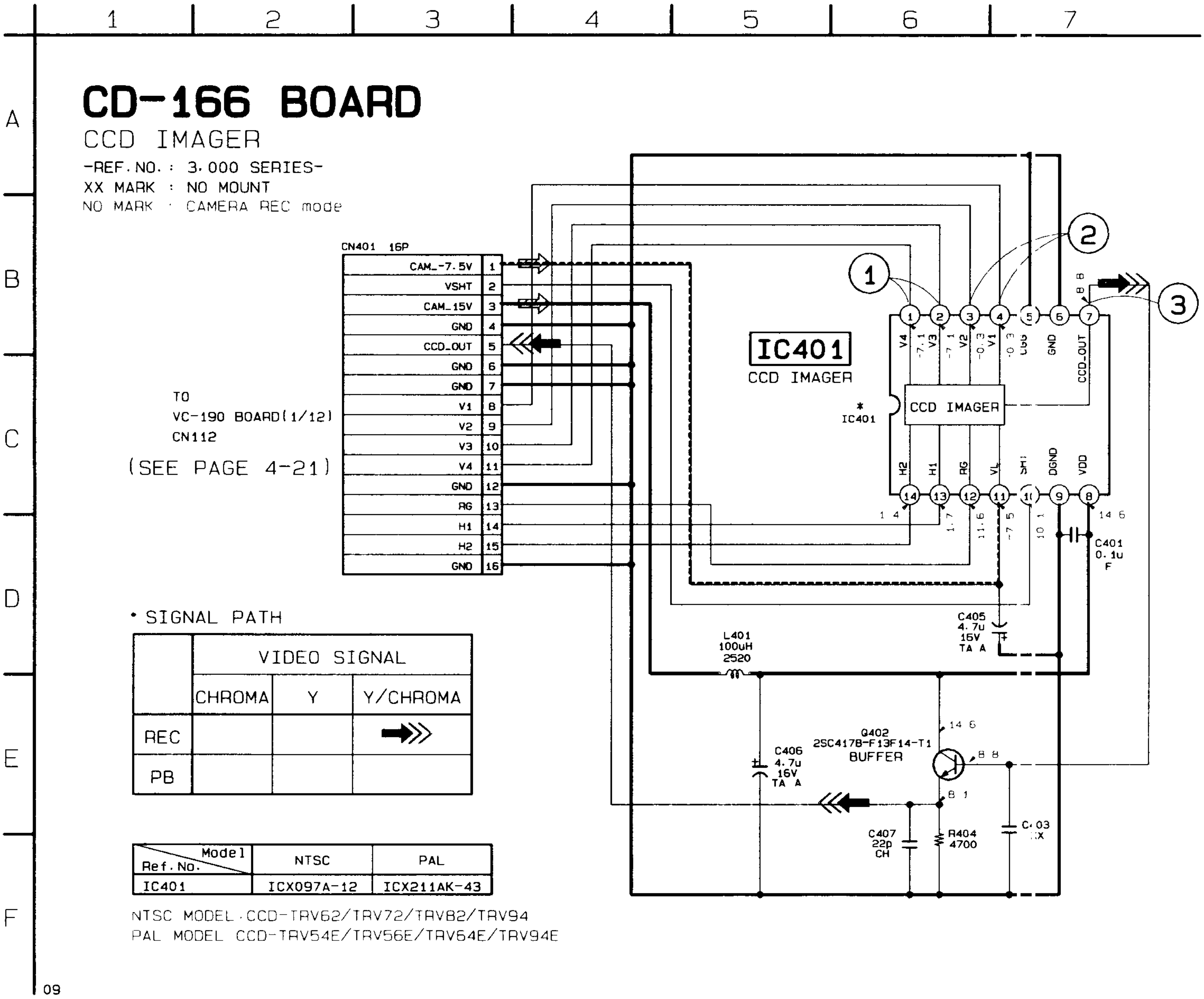



PD-78 (NTSC 4 INCH LCD MODEL)
PD-80 (3.5 INCH/PAL 4 INCH LCD MODEL)
(RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER)
MM-35
(DIGITAL MEMORY)
CD-166
(CCD IMAGER)
DD-95
(POWER)
SE-61
(STEADY SHOT)

CD-166 BOARD

CCD IMAGER

-REF. NO. : 3.000 SERIES-
XX MARK : NO MOUNT
NO MARK : CAMERA REC mode


1
2
3
4
5
6
7
A
B
C
D
E
F
CN401 16P
CAM_-7.5V 1
VSHT 2
CAM_15V 3
GND 4
CCD_OUT 5
GND 6
GND 7
V1 8
V2 9
V3 10
V4 11
GND 12
RG 13
H1 14
H2 15
GND 16
IC401
CCD IMAGER
* IC401
CCD IMAGER
V4
V3
V2
V1
VGG
GND
CCD_OUT
-7.1
-7.1
-0.3
-0.3
8.8
H2
H1
RG
VL
SHT
DGND
VDD
1.4
1.7
11.6
-7.5
10.1
14.6
C401 0.1u F
C405 4.7u 16V TA A
L401 100uH 2520
Q402 2SC4178-F13F14-T1 BUFFER
14.6
8.8
8.1
C406 4.7u 16V TA A
C407 22p CH
R404 4700
C403 X
09

TO
VC-190 BOARD(1/12)
CN112
(SEE PAGE 4-21)

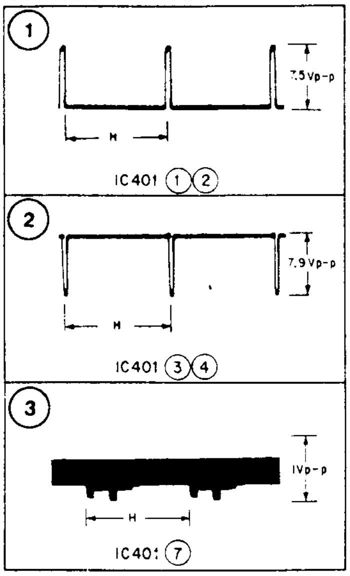
• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡»»
PB			

Model / Ref. No.	NTSC	PAL
IC401	ICX097A-12	ICX211AK-43

NTSC MODEL : CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL : CCD-TRV54E/TRV56E/TRV64E/TRV94E

CD-166 BOARD

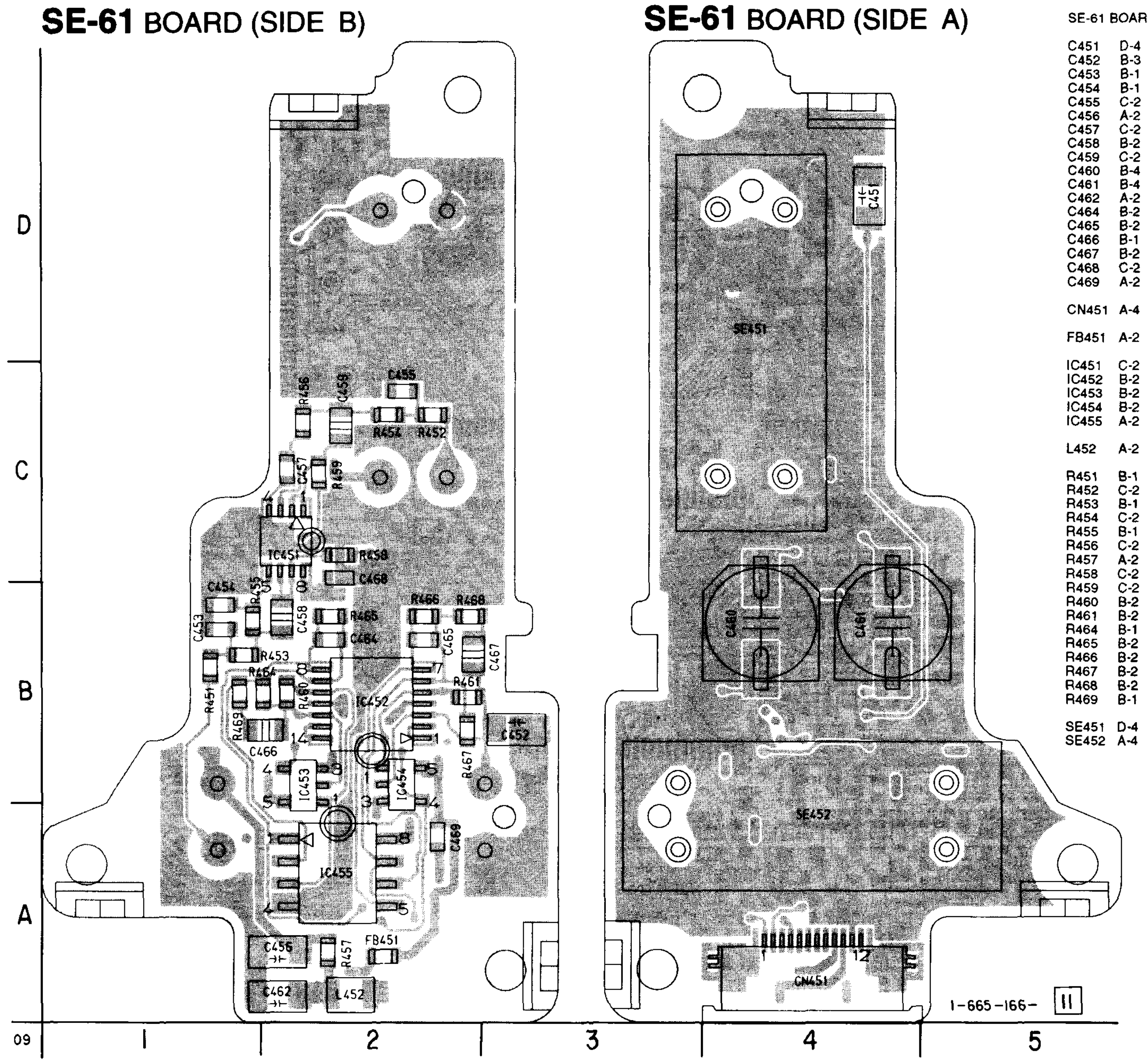


Note on the CCD imager replacement

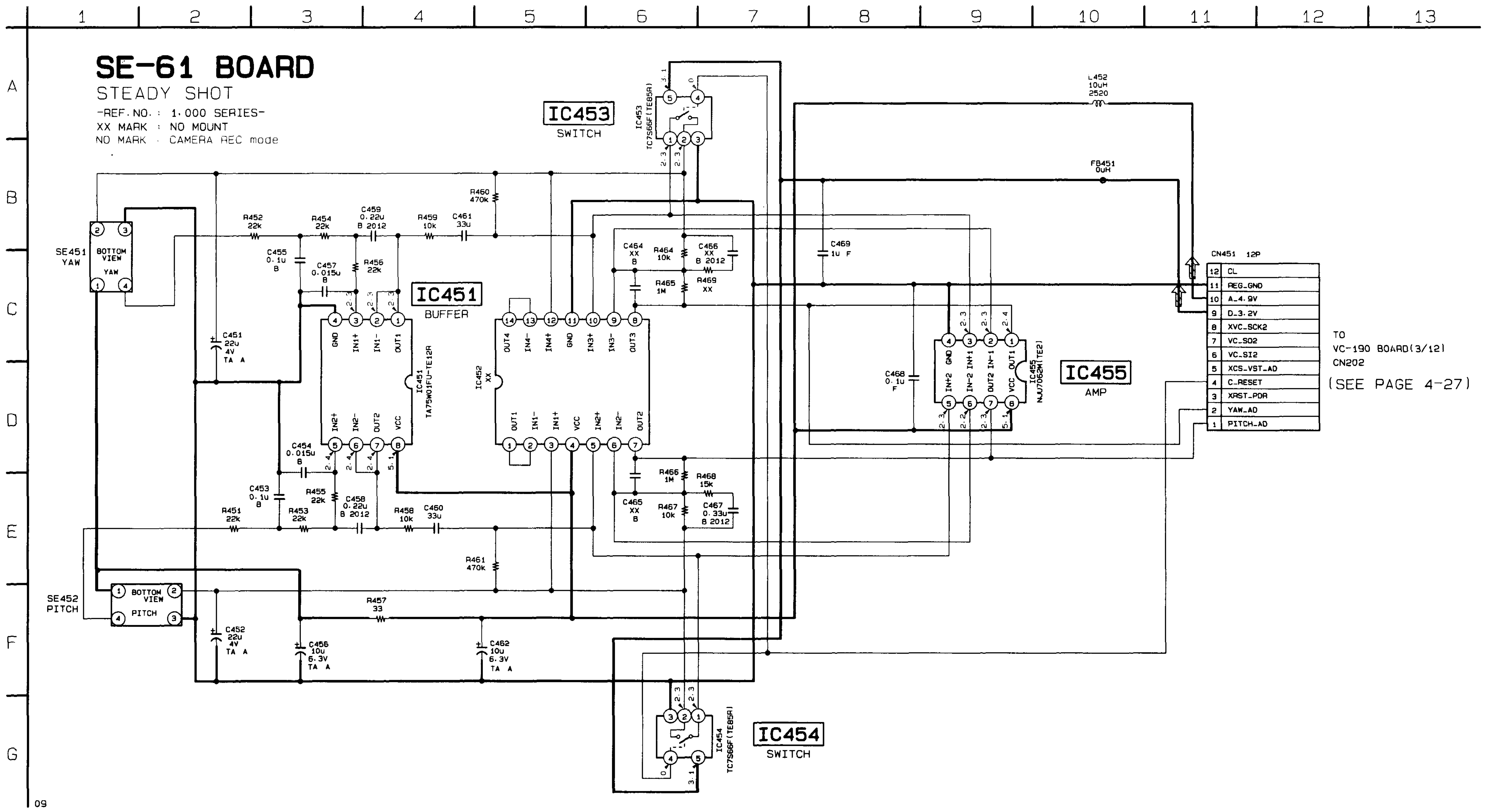
- The CCD imager is not mounted for the already mounted CD-166 board supplied as the repair parts. When replacing the CD-166 board, remove the CCD imager from the old board and install on the new board.
- Perform all adjustments of the camera block when the CCD imager has been replaced.
- Handle the CCD imager with attention such as MOS IC as it may be broken by static electricity in the structure. Also, prevent the receiving light section from dust attached and strong light.

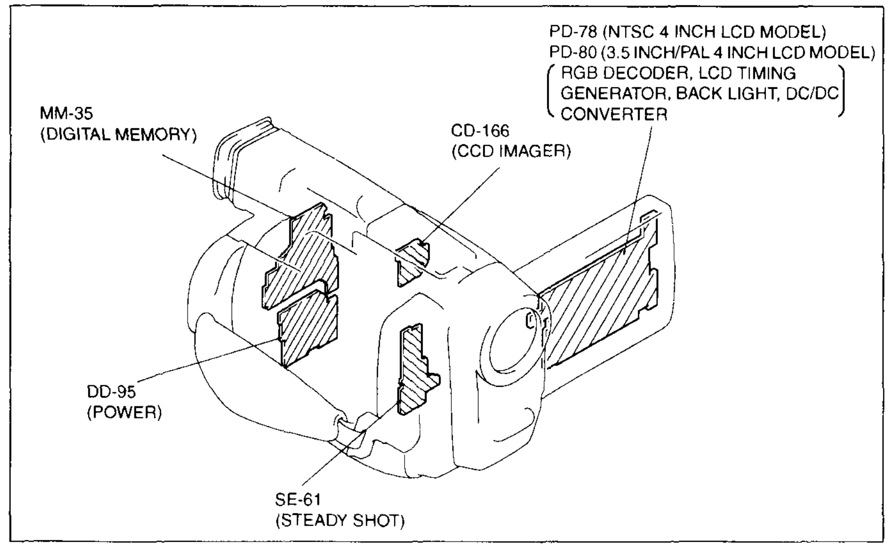
SE-61 (STEADY SHOT) PRINTED WIRING BOARD

– Ref No. SE-61 BOARD: 1,000 series –


SE-61 BOARD (SIDE B)
SE-61 BOARD (SIDE A)
D
C
B
A
1
2
3
4
5
09
C455
R456
R458
R454
R452
C457
R459
IC451
R458
C468
C454
C453
C458
R465
R466
R468
C464
C465
C467
R453
R464
R461
R451
R469
R460
IC452
C452
R467
C466
IC453
IC454
IC455
C469
C456
R457
FB451
C462
L452
SE451
SE452
C460
C461
CN451
1
12
1-665-166-
11

SE-61 BOARD	
C451	D-4
C452	B-3
C453	B-1
C454	B-1
C455	C-2
C456	A-2
C457	C-2
C458	B-2
C459	C-2
C460	B-4
C461	B-4
C462	A-2
C464	B-2
C465	B-2
C466	B-1
C467	B-2
C468	C-2
C469	A-2
CN451	A-4
FB451	A-2
IC451	C-2
IC452	B-2
IC453	B-2
IC454	B-2
IC455	A-2
L452	A-2
R451	B-1
R452	C-2
R453	B-1
R454	C-2
R455	B-1
R456	C-2
R457	A-2
R458	C-2
R459	C-2
R460	B-2
R461	B-2
R464	B-1
R465	B-2
R466	B-2
R467	B-2
R468	B-2
R469	B-1
SE451	D-4
SE452	A-4


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
SE-61 BOARD
STEADY SHOT
-REF. NO. : 1,000 SERIES-
XX MARK : NO MOUNT
NO MARK : CAMERA REC mode
IC453
SWITCH
IC453 TC7S66F(TE85R)
IC451
BUFFER
IC451 TA75W01FU-TE12R
IC452 XX
IC455
AMP
IC455 NJU7062M(TE2)
IC454
SWITCH
IC454 TC7S66F(TE85R)
SE451 YAW
BOTTOM VIEW
YAW
SE452 PITCH
BOTTOM VIEW
PITCH
L452 10uH 2520
FB451 0uH
R460 470k
R452 22k
R454 22k
C459 0.22u B 2012
R459 10k
C461 33u
C455 0.1u B
C457 0.015u B
R456 22k
C451 22u 4V TA A
C454 XX B
R464 10k
C456 XX B 2012
R465 1M
R469 XX
C469 1u F
C468 0.1u F
C454 0.015u B
C453 0.1u B
R455 22k
C458 0.22u B 2012
R451 22k
R453 22k
R458 10k
C460 33u
R466 1M
R468 15k
C465 XX B
R467 10k
C467 0.33u B 2012
R461 470k
R457 33
C452 22u 4V TA A
C456 10u 6.3V TA A
C462 10u 6.3V TA A
GND
IN1+
IN1-
OUT1
IN2+
IN2-
OUT2
VCC
OUT4
IN4-
IN4+
IN3+
IN3-
OUT3
CN451 12P
12 CL
11 REG_GND
10 A_4.9V
9 D_3.2V
8 XVC_SCK2
7 VC_SO2
6 VC_SI2
5 XCS_VST_AD
4 C_RESET
3 XRST_POR
2 YAW_AD
1 PITCH_AD
TO VC-190 BOARD(3/12) CN202
(SEE PAGE 4-27)
09


PD-78 (NTSC 4 INCH LCD MODEL)
PD-80 (3.5 INCH/PAL 4 INCH LCD MODEL)
(RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER)
MM-35 (DIGITAL MEMORY)
CD-166 (CCD IMAGER)
DD-95 (POWER)
SE-61 (STEADY SHOT)

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

VC-190 BOARD

C251	F-12
C252	G-6
C253	G-6
C254	F-6
C255	G-6
C256	G-6
C258	F-7
C259	F-7
C260	F-7
C261	G-6
C262	F-7
C263	G-8
C266	G-7
C267	F-13
C268	G-6
C269	F-11
C271	F-12
C272	G-11
C274	G-6
C276	F-6
C1001	B-5
C1002	B-5
C1005	A-13
C1006	B-4
C1007	A-14
C1008	B-6
C1009	A-14
C1010	B-6
C1011	A-13
C1012	B-4
C1013	B-5
C1014	B-4
C1015	B-5
C1016	C-4
C1017	B-14
C1018	B-13
C1019	B-6
C1020	B-5
C1021	A-5
C1022	A-5
C1023	A-6
C1024	A-6
C1025	B-5
C1026	C-4
C1027	A-14
C1028	A-13
C1029	B-6
C1030	B-14
C1031	B-13
C1033	A-13
C1034	C-13
C1035	C-13
C1036	B-14
C1037	B-13
C1038	B-14
C1039	B-15
C1040	B-14
C1041	B-13
C1042	B-14
C1043	B-13
C1044	B-13
C1045	B-14
C1046	B-13
C1047	B-6
C1048	B-14
C1049	B-6
C1050	C-15
C1051	B-14
C1052	B-14
C1053	B-13
C1054	C-14
C1056	C-14
C1058	C-5
C1059	C-13
C1060	C-14
C1061	B-5
C1062	B-5
C1063	C-13
C1064	B-5
C1065	B-6
C1068	C-13
C1070	C-5
C1071	B-6
C1073	C-6
C1074	C-5
C1076	C-5
C1077	C-6
C1078	C-6
C1080	C-5
C1081	C-6
C1083	C-13
C1084	C-6
C1085	D-6
C1086	C-13
C1087	D-14
C1088	C-5
C1089	D-5
C1090	C-14
C1091	C-5
C1092	C-5
C1093	C-5
C1094	D-14
C1095	D-14
C1096	C-4
C1097	C-14
C1140	C-6
C1141	C-7
C1144	C-13
C1145	C-6
C1147	C-5
C1149	B-6
C1150	D-13
C1151	C-6
C1152	B-4
C1153	C-4
C1154	C-4
C1155	C-4
C1156	C-4
C1157	C-16
C1158	C-2
C1160	B-3
C1161	B-3
C1162	A-3
C1163	A-3
C1164	A-3
C1165	B-2
C1166	A-3
C1167	A-3
C1168	A-4
C1170	D-4
C1171	C-4
C1172	C-3
C1173	C-2
C1174	B-3
C1201	E-4
C1202	E-4
C1203	D-4
C1204	D-4
C1205	E-4
C1206	E-4
C1207	E-4
C1208	D-4
C1209	E-5
C1210	E-2
C1212	E-4
C1213	E-4
C1215	D-4
C1216	D-4
C1217	D-5
C1218	E-5
C1219	E-4
C1220	E-4
C1222	B-1
C1223	D-16
C1224	D-16
C1227	E-14
C1228	E-15
C1229	E-14
C1230	D-14
C1231	D-15
C1232	E-15
C1233	D-15
C1234	E-15
C1236	E-15
C1237	E-15
C1240	D-14
C1250	E-15
C1280	E-5
C1282	D-16
C1283	E-5
C1284	B-1
C1285	E-16
C1290	E-4
C1301	D-14
C1302	D-14
C1305	E-6
C1307	E-6
C1308	F-12
C1309	F-12
C1310	F-13
C1311	F-13
C1312	F-12
C1313	F-13
C1314	F-6
C1315	E-6
C1317	E-13
C1318	F-12
C1319	F-6
C1320	F-12
C1321	E-13
C1322	E-6
C1323	E-6
C1324	E-13
C1325	D-13
C1326	D-13
C1327	D-13
C1328	D-13
C1330	D-7
C1331	D-12
C1332	D-12
C1333	C-12
C1334	D-13
C1335	E-7
C1336	E-7
C1337	E-7
C1338	E-7
C1339	E-12
C1340	E-12
C1342	E-14
C1343	F-7
C1344	E-7
C1348	E-7
C1349	E-7
C1350	C-15
C1351	F-8
C1352	C-15
C1353	B-15
C1370	D-13
C1402	C-8
C1403	C-8
C1404	C-7
C1405	C-11
C1406	C-8
C1407	C-7
C1408	C-7
C1409	C-7
C1410	D-7
C1411	D-7
C1412	C-12
C1414	D-7
C1415	D-12
C1416	E-7
C1417	E-7
C1422	D-12
C1423	E-11
C1424	E-7
C1425	E-7
C1426	E-7
C1427	E-8
C1429	E-8
C1430	E-8
C1431	F-8
C1432	F-8
C1433	E-8
C1434	D-8
C1435	D-9
C1436	D-9
C1437	D-9
C1439	C-9
C1441	D-9
C1444	E-8
C1463	E-7
C1466	D-7
C1468	C-8
C1471	C-8
C1474	D-7
C1475	E-8
C1476	E-8
C1477	E-8
C1478	D-12
C1479	C-7
C1480	C-8
C1481	C-8
C1485	D-11
C1486	D-11
C1487	D-10
C1488	D-11
C1489	D-11
C1490	C-9
C1491	E-8
C1492	D-7
C1493	C-11
C1601	F-5
C1602	F-6
C1604	E-6
C1605	F-5
C1608	G-5
C1610	F-14
C1612	F-5
C1615	F-4
C1616	F-4
C1617	F-14
C1618	F-14
C1619	F-14
C1620	F-14
C1621	F-4
C1622	F-14
C1624	F-14
C1625	G-15
C1626	F-13
C1628	F-5
C1629	F-5
C1630	E-5
C1631	F-5
C1635	E-14
C1637	E-15
C1638	E-15
C1639	E-14
C1640	E-14
C1641	F-14
C1642	E-15
C1643	F-14
C1644	F-14
C1645	F-14
C1646	F-14
C1647	F-15
C1701	F-3
C1702	D-18
C1703	F-16
C1751	F-15
C1752	G-1
C1753	E-2
C1754	E-17
C1755	E-17
C1756	E-17
C1757	E-18
C1758	E-18
C1760	G-2
C1761	F-18
C1762	G-18
C1763	G-2
C1764	G-2
C1765	G-1
C1766	E-1
C1767	F-1
C1768	F-1
C1769	F-1
C1770	F-1
C1771	E-2
C1772	E-2
C1773	F-1
C1774	F-2
C1775	F-2
C1776	F-2
C1777	F-2
C1778	F-2
C1779	G-1
C1780	F-18
C1851	A-15
C1852	A-16
C1853	B-16
C1854	B-4
C1855	B-16
C1856	B-4
C1857	B-4
C1858	B-16
C1859	B-16
C1860	B-4
C1861	B-4
C1862	B-15
C1863	B-15
C1864	B-4
C1865	B-15
C1866	B-15
C1867	B-15
C1868	A-2
C1869	B-1
C1870	A-17
C1871	A-17
C1872	A-2
C1873	A-2
C1874	A-17
C1875	A-2
C1876	A-17
C1877	A-17
C1878	A-17
C1879	A-18
C1880	A-2
C1882	A-18
C1884	A-18
C1886	B-15
C1887	A-1
C1888	A-16
C1951	C-9
C1952	B-8
C1953	B-8
C1954	A-12
C1955	B-9
C1956	B-8
C1957	C-11
C1958	B-11
C1959	C-12
C1960	A-12
C1961	C-11
C1963	A-8
C1964	A-7
C1965	A-12
C1967	A-7
C1968	A-12
C1971	A-7
C1974	A-12
C1976	C-11
C1978	B-10
C1980	B-10
C1981	B-11
C1982	B-11
C1986	B-7
C1987	B-8
C1989	B-8
C1990	A-8
C1991	A-12
C2051	E-1
C2052	D-1
C2054	D-2
C2055	D-2
C2056	D-2
C2057	E-2
CN101	A-14
CN102	A-2
CN103	A-3
CN104	A-15
CN105	A-7
CN106	A-18
CN111	C-17
CN112	F-13
CN113	G-13
CN202	D-9
CN204	C-18
CN205	G-11
CN207	A-10
CN208	B-9
CN1350	C-10
CN1350	D-10
CN1950	B-17
CN1951	E-18
CN1953	A-11
D1001	D-15
D1036	E-7
D1201	E-4
D1202	D-4
D1305	E-7
D1350	B-2
D1351	B-2
D1352	B-2
D1353	E-10
D1601	E-5
D1602	G-4
D1951	C-9
D1952	B-8
D1953	A-8
D1954	A-8
D1955	B-8
D1956	B-12
D1957	B-8
D1958	A-7
D2051	C-2
D2052	C-2
FB251	F-7
FB1151	D-4
FB1601	F-5
FB1602	G-5
FB1603	F-4
FB1604	F-4
FB1605	F-4
FB1701	E-18
FB1702	G-4
IC101	B-14
IC102	C-3
IC103	B-3
IC104	C-1
IC105	E-3
IC106	E-15
IC108	E-6
IC109	D-8
IC110	C-16
IC114	D-17
IC115	F-3
IC116	G-2
IC117	F-17
IC118	E-2
IC119	E-2
IC120	F-1
IC121	B-15
IC122	A-17
IC129	E-12
IC130	D-16
IC202	F-5
IC203	F-15
IC251	F-13
IC252	G-7
IC253	F-12
IC255	F-8
IC800	D-1
IC1951	B-8
IC1952	B-11
IC1995	B-7
L252	F-7
L253	F-7
L1002	A-13
L1003	B-5
L1004	C-4
L1005	B-13
L1006	C-13
L1007	C-5
L1008	C-5
L1009	C-6
L1010	C-6
L1011	C-6
L1012	D-13
L1013	D-6
L1014	D-13
L1015	D-6
L1017	C-14
L1018	D-14
L1019	C-5
L1020	D-15
L1141	D-5
L1151	B-4
L1154	B-2
L1201	E-14
L1202	D-14
L1203	E-5
L1204	E-4
L1206	B-1
L1207	C-17
L1209	E-14
L1220	E-5
L1301	D-14
L1303	E-14
L1305	F-7
L1306	E-7
L1307	E-7
L1308	F-7
L1310	E-14
L1603	G-15
L1604	F-14
L1751	G-15
L1752	G-2
L1753	G-1
L1754	E-1
L1870	B-17
L1951	B-8
L2051	E-1
Q251	G-6
Q252	F-11
Q253	G-12
Q1001	A-4
Q1002	B-5
Q1003	C-4
Q1004	A-5
Q1005	A-5
Q1006	A-6
Q1007	A-6
Q1008	C-4
Q1009	A-6
Q1010	A-5
Q1011	A-5
Q1012	A-6
Q1013	B-5
Q1014	C-5
Q1015	B-5
Q1016	B-5
Q1018	C-15
Q1025	D-5
Q1026	B-6
Q1028	C-13
Q1029	D-6
Q1030	D-13
Q1033	D-14
Q1034	C-6
Q1036	C-6
Q1037	D-5
Q1038	C-13
Q1039	C-14
Q1040	C-14
Q1041	D-14
Q1043	D-15
Q1044	C-5
Q1045	C-14
Q1100	C-13
Q1135	D-14
Q1136	C-5
Q1138	C-5
Q1139	C-6
Q1140	C-14
Q1141	B-6
Q1150	C-13
Q1151	A-3
Q1201	E-5
Q1202	D-5
Q1203	E-4
Q1220	E-5
Q1221	D-17
Q1223	D-4
Q1224	D-4
Q1305	F-7
Q1350	E-7
Q1351	C-15
Q1352	F-11
Q1353	C-15
Q1354	E-11
Q1355	F-11
Q1356	D-15
Q1357	C-15
Q1485	D-11
Q1486	C-10
Q1487	C-11
Q1488	C-11
Q1489	D-12
Q1490	D-12
Q1491	D-11
Q1492	D-11
Q1493	D-11
Q1494	D-11
Q1601	F-14
Q1602	F-13
Q1603	F-14
Q1604	F-13
Q1605	E-14
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Q1852	B-1
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Q1854	A-1
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Q1952	C-9
Q1953	C-9
Q1954	B-9
Q1955	B-10
Q1956	B-8
Q1959	A-8
Q1963	B-9
Q2051	D-2
Q2052	D-2
Q2053	E-2
R251	G-6
R252	G-6
R253	F-13
R254	G-6
R255	G-6
R256	G-6
R257	G-6
R258	G-6
R259	F-6
R260	F-13
R261	F-11
R262	F-11
R263	F-6
R264	F-6
R265	F-13
R266	F-11
R267	G-6
R269	G-12
R270	G-11
R271	F-13
R272	F-6
R273	G-11
R275	G-12
R293	D-9
R294	C-9
R295	D-9
R296	D-10
R297	D-10
R298	D-9
R299	C-9
R300	C-9
R301	C-9
R302	D-10
R303	D-10
R705	G-17
R706	G-17
R1001	A-5
R1002	B-4
R1003	B-4
R1004	B-5
R1005	B-5
R1006	B-4
R1007	B-4
R1009	C-5
R1010	B-5
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R1012	A-5
R1013	A-6
R1014	C-5
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R1019	A-6
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R1042	B-14
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R1044	B-5
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R1046	B-14
R1047	B-14
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R1053	B-13
R1054	C-14
R1057	C-14
R1058	B-6
R1059	C-6
R1062	B-6
R1076	C-13
R1081	C-5
R1082	C-6
R1083	B-6
R1084	C-4
R1085	D-4
R1086	C-5
R1087	C-6
R1088	C-6
R1089	C-5
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R1098	C-6
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R1103	C-13
R1104	D-13
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R1107	D-6
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R1117	D-14
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R1119	C-13
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R1122	C-6
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R1124	D-5
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R1128	C-14
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R1137	C-15
R1138	C-15
R1140	C-14
R1142	D-13
R1143	C-14
R1144	C-13
R1145	B-5
R1146	C-13
R1147	D-13
R1148	B-6
R1149	B-6
R1150	B-6
R1151	C-4
R1152	C-4
R1153	C-4
R1154	C-4
R1155	C-4
R1156	C-4
R1157	C-4
R1158	B-3
R1159	B-3
R1160	A-4
R1161	A-4
R1162	A-4
R1163	A-4
R1164	C-2
R1165	D-4
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R1181	A-3
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R1218	E-5
R1219	D-4
R1221	E-4
R1222	D-4
R1223	D-4
R1225	E-4
R1227	E-4
R1228	D-5
R1230	E-4
R1231	E-4
R1232	D-4
R1233	D-4
R1234	D-4
R1234	D-4
R1236	C-2
R1237	B-2
R1238	C-2
R1239	C-2
R1240	B-2
R1241	B-1
R1242	B-1
R1246	E-15
R1247	E-15
R1248	E-14
R1249	D-15
R1250	E-14
R1251	E-14
R1252	E-14
R1253	D-14
R1254	D-14
R1255	D-14
R1256	E-14
R1280	E-5
R1281	E-5
R1283	D-16
R1284	D-16
R1285	D-16
R1287	E-16
R1289	E-4
R1290	D-5
R1292	D-5
R1293	B-1
R1294	D-4
R1295	D-4
R1296	D-4
R1297	E-14
R1298	E-4
R1299	E-4
R1307	F-6
R1308	E-6
R1312	E-7
R1313	D-7
R1314	D-13
R1315	D-7
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R1324	E-6
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R1776	G-16
R1778	E-2
R1779	G-16
R1780	G-16
R1781	E-16
R1782	G-16
R1783	E-17
R1784	E-17
R1785	E-18
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R1792	F-18
R1794	F-18
R1795	F-18
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R1797	F-1
R1798	E-1
R1799	E-1
R1800	E-1
R1801	F-1
R1802	F-1
R1803	G-1
R1804	F-1
R1805	F-1
R1806	G-1
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R1808	G-1
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R1813	F-2
R1814	F-2
R1815	F-1
R1819	G-17
R1820	G-17
R1821	G-16
R1822	G-1
R1823	G-17
R1826	G-17
R1827	G-17
R1836	F-18
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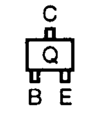
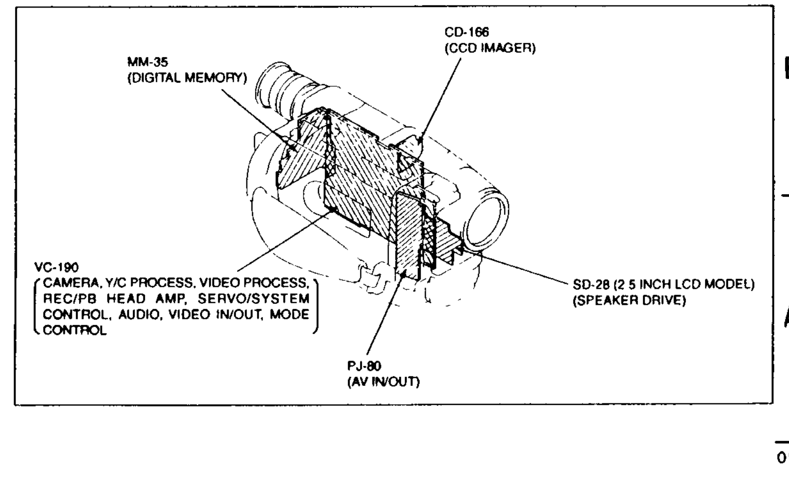
R1852	A-15
R1853	B-15
R1854	B-15
R1855	A-4
R1856	A-4
R1857	A-4
R1859	B-15
R1860	B-15
R1861	F-16
R1862	F-15
R1863	F-15
R1865	A-2
R1867	A-4
R1868	A-2
R1869	A-2
R1872	A-17
R1873	A-2
R1874	A-17
R1875	A-17
R1876	A-17
R1877	B-1
R1878	A-1
R1879	A-1
R1880	B-2
R1881	A-17
R1882	B-2
R1883	A-17
R1884	B-2
R1887	A-2
R1888	B-1
R1889	A-1
R1890	A-1
R1891	A-1
R1892	A-1
R1893	A-16
R1894	A-1
R1895	A-2
R1896	B-1
R1897	A-4
R1898	A-2
R1953	C-9
R1954	B-10
R1955	B-9
R1956	A-8
R1957	A-8
R1958	A-8
R1961	C-8
R1962	B-8
R1963	A-11
R1964	A-11
R1965	B-7
R1966	C-7
R1967	C-7
R1969	C-7
R1970	C-7
R1971	C-8
R1972	B-7
R1973	B-12
R1977	A-11
R1979	C-8
R1980	C-8
R1982	A-11
R1986	A-11
R1991	B-8
R2001	C-12
R2010	A-11
R2011	C-12
R2012	A-8
R2015	C-11
R2017	B-11
R2020	B-10
R2021	B-10
R2022	B-11
R2023	B-11
R2024	B-11
R2026	B-11
R2029	B-11
R2031	B-10
R2036	A-7
R2037	A-7
R2038	A-7
R2044	B-8
R2046	B-8
R2047	B-7
R2048	B-7
R2049	B-8
R2051	D-2
R2056	D-2
R2058	E-2
R2060	D-2
R2061	D-2
R2062	E-2
R2063	D-2
R2064	D-2
R2065	E-2
R2070	B-18
R2071	B-18
R2074	B-1
R2075	D-2
R2076	C-2
R2151	B-8
R2152	B-8
R2154	C-12
R2162	C-7
TH1751	C-7
X1305	E-13
X1601	F-4
X1751	E-17
X1752	G-18
X1951	C-10
X1952	C-11

- **For Printed Wiring Boards.**
- This board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor

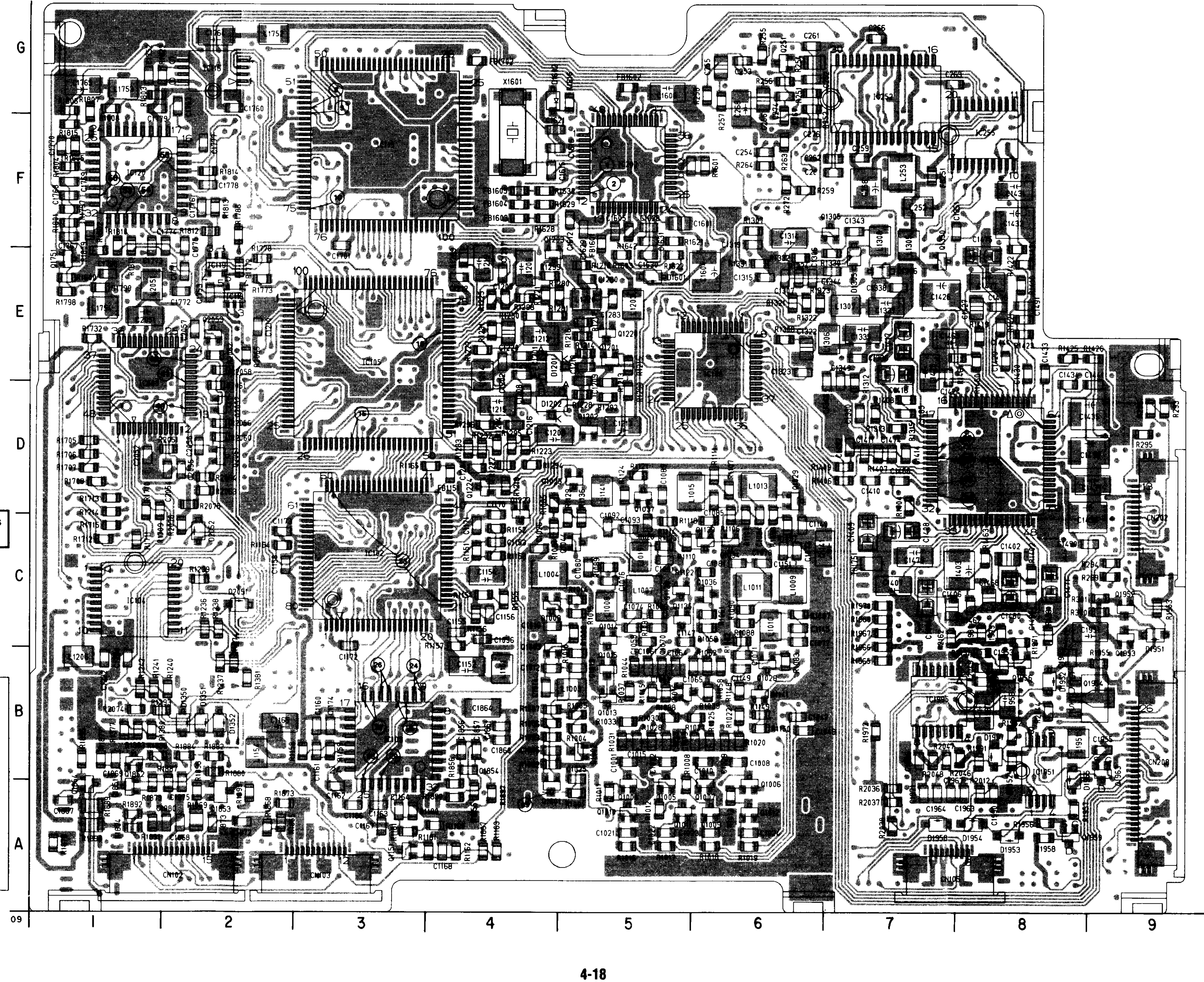



MM-35
(DIGITAL MEMORY)
CD-166
(CCD IMAGER)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
SD-28 (2.5 INCH LCD MODEL)
(SPEAKER DRIVE)
PJ-80
(AV IN/OUT)

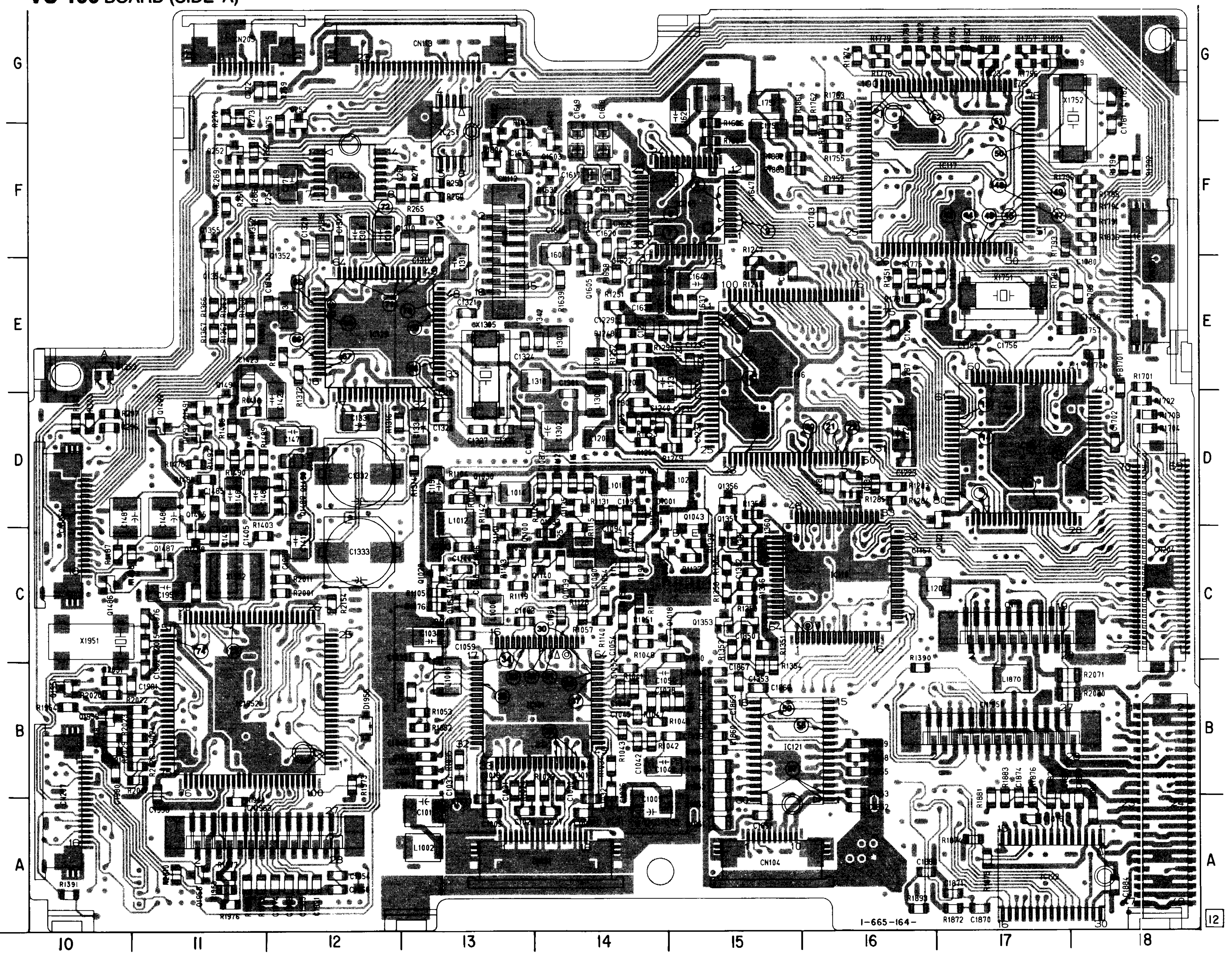
VC-190 (CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL) PRINTED WIRING BOARD

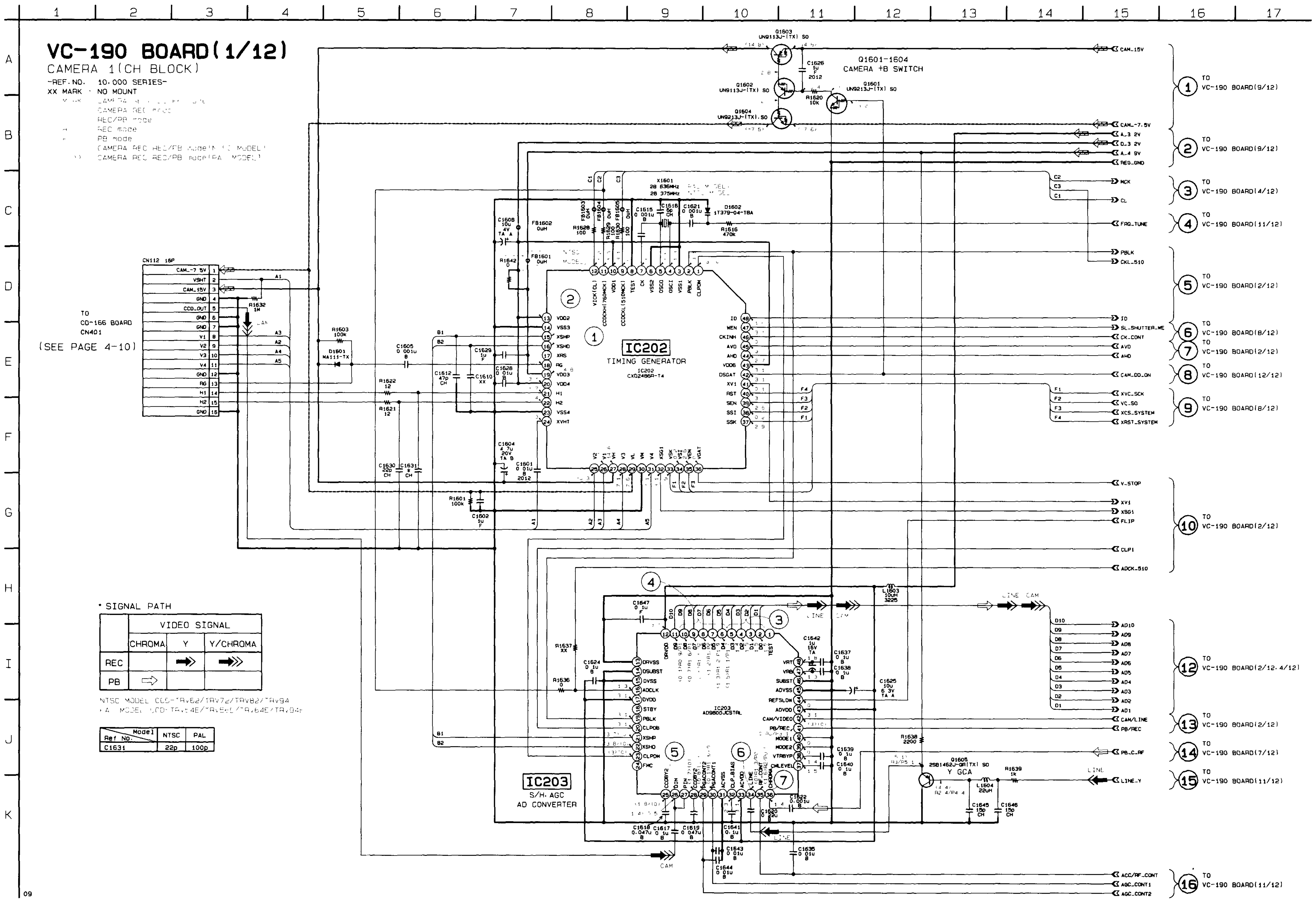
– Ref No. VC-190 BOARD: 10,000 series –

VC-190 BOARD (SIDE B)



VC-190 BOARD (SIDE A)




Q1601-1604
CAMERA +B SWITCH
CN112 16P
TO CD-166 BOARD CN401
(SEE PAGE 4-10)
IC202
TIMING GENERATOR
IC202 CXD2466R-T4
IC203
S/H, AGC
AD CONVERTER
IC203 AD9800JCSTRL
Q1605 Y GCA
TO VC-190 BOARD(9/12)
TO VC-190 BOARD(9/12)
TO VC-190 BOARD(4/12)
TO VC-190 BOARD(11/12)
TO VC-190 BOARD(2/12)
TO VC-190 BOARD(8/12)
TO VC-190 BOARD(2/12)
TO VC-190 BOARD(12/12)
TO VC-190 BOARD(8/12)
TO VC-190 BOARD(2/12)
TO VC-190 BOARD(2/12, 4/12)
TO VC-190 BOARD(2/12)
TO VC-190 BOARD(7/12)
TO VC-190 BOARD(11/12)
TO VC-190 BOARD(11/12)

VC-190 BOARD(1/12)

CAMERA 1(CH BLOCK)

-REF. NO. 10,000 SERIES-
XX MARK : NO MOUNT
CAMERA REC mode
REC/PB mode
REC mode
PB mode
CAMERA REC REC/PB mode(NTSC MODEL)
CAMERA REC REC/PB mode(PAL MODEL)

• SIGNAL PATH

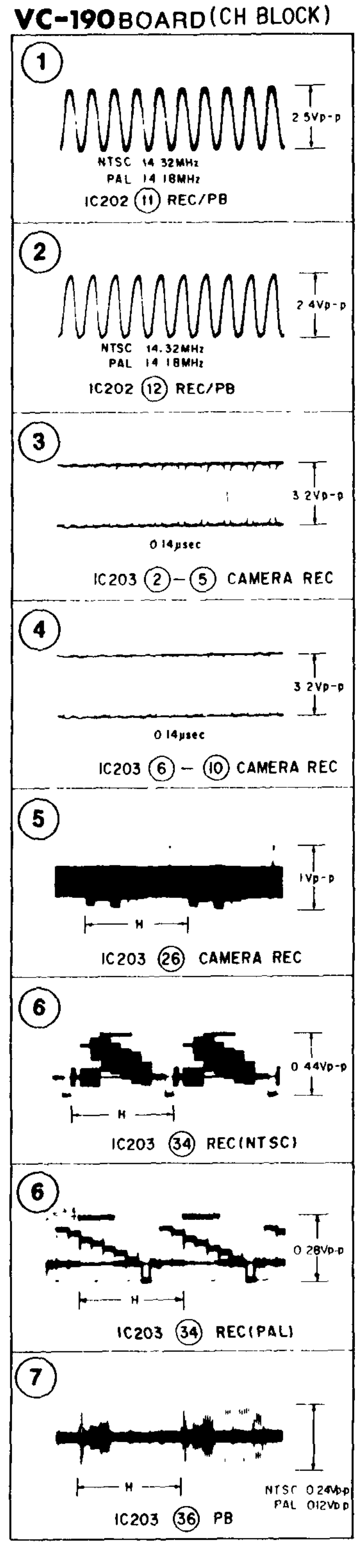
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		➡》	➡》》
PB	⇨		

NTSC MODEL CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL CCD-TRV54E/TRV56E/TRV64E/TRV94E

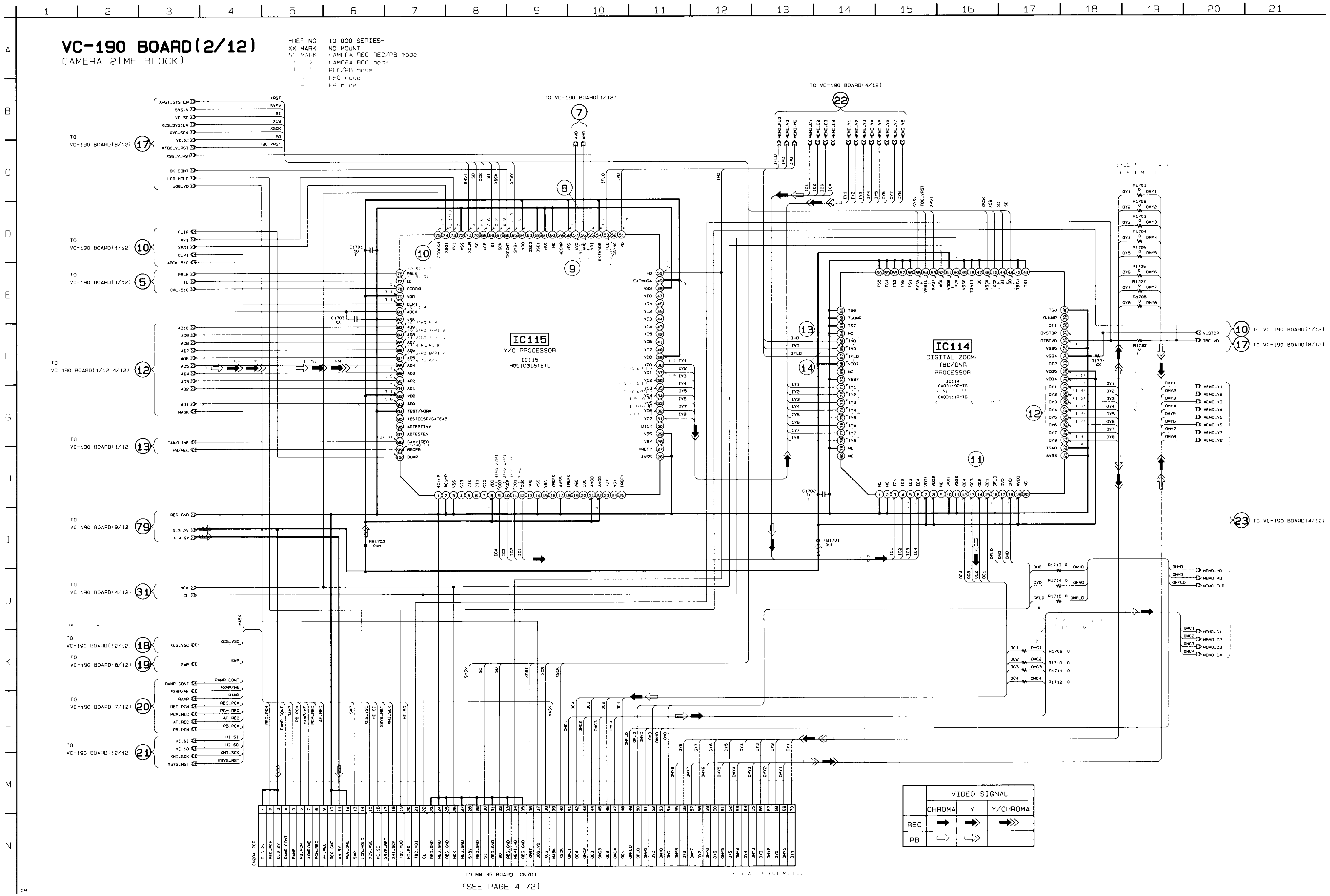
Ref No. \ Model	NTSC	PAL
C1631	22p	100p

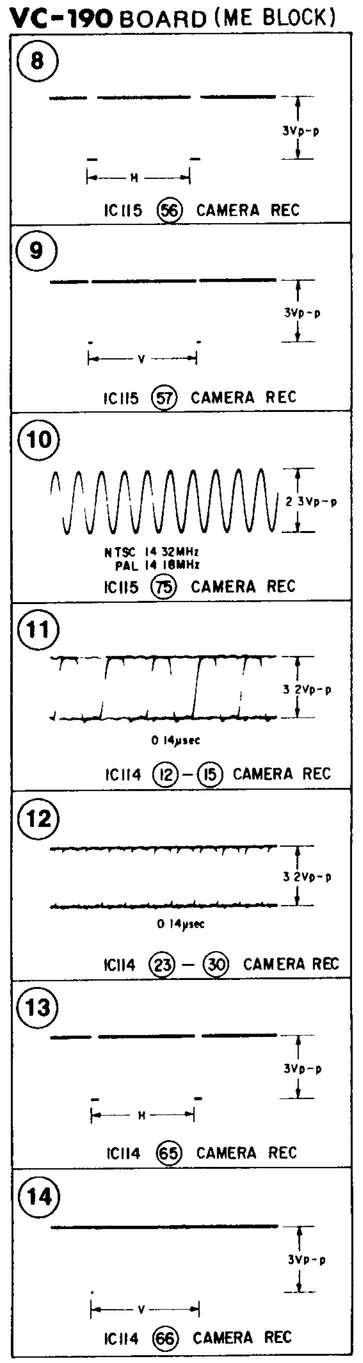
09

VC-190 BOARD (CH BLOCK)



- For schematic diagrams.
- Refer to page 4–17 for Printed Wiring Board.


VC-190 BOARD (2/12)
CAMERA 2 (ME BLOCK)
IC115
Y/C PROCESSOR
IC115 HG51D318TETL
IC114
DIGITAL ZOOM, TBC/DNR PROCESSOR
IC114 CXD3119R-16
TO VC-190 BOARD (1/12)
TO VC-190 BOARD (4/12)
TO VC-190 BOARD (8/12)
TO VC-190 BOARD (9/12)
TO VC-190 BOARD (7/12)
TO VC-190 BOARD (12/12)
TO MM-35 BOARD CN701
(SEE PAGE 4-72)
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB

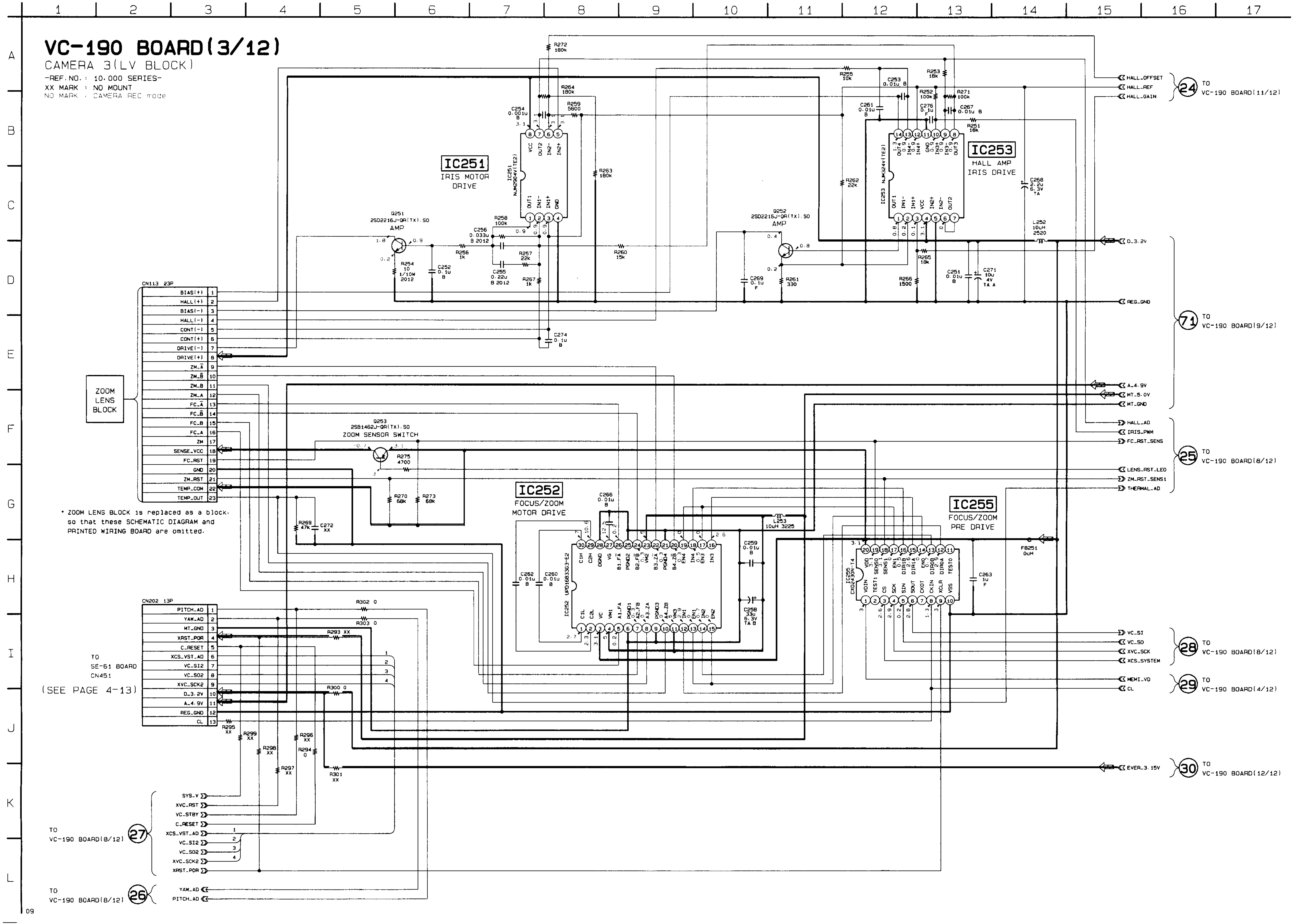

VC-190 BOARD (ME BLOCK)
⑧ IC115 ㊻ CAMERA REC 3Vp-p H
⑨ IC115 ㊼ CAMERA REC 3Vp-p V
⑩ 2.3Vp-p NTSC 14.32MHz PAL 14.18MHz IC115 ㊷ CAMERA REC
⑪ 3.2Vp-p 0.14μsec IC114 ⑫ – ⑮ CAMERA REC
⑫ 3.2Vp-p 0.14μsec IC114 ㉓ – ㉚ CAMERA REC
⑬ 3Vp-p H IC114 (65) CAMERA REC
⑭ 3Vp-p V IC114 (66) CAMERA REC

- **For schematic diagrams.**
- Refer to page 4–17 for Printed Wiring Board.

VC-190 BOARD(3/12)

CAMERA 3(LV BLOCK)

-REF.NO.: 10,000 SERIES-
XX MARK : NO MOUNT
NO MARK : CAMERA REC mode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A
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D
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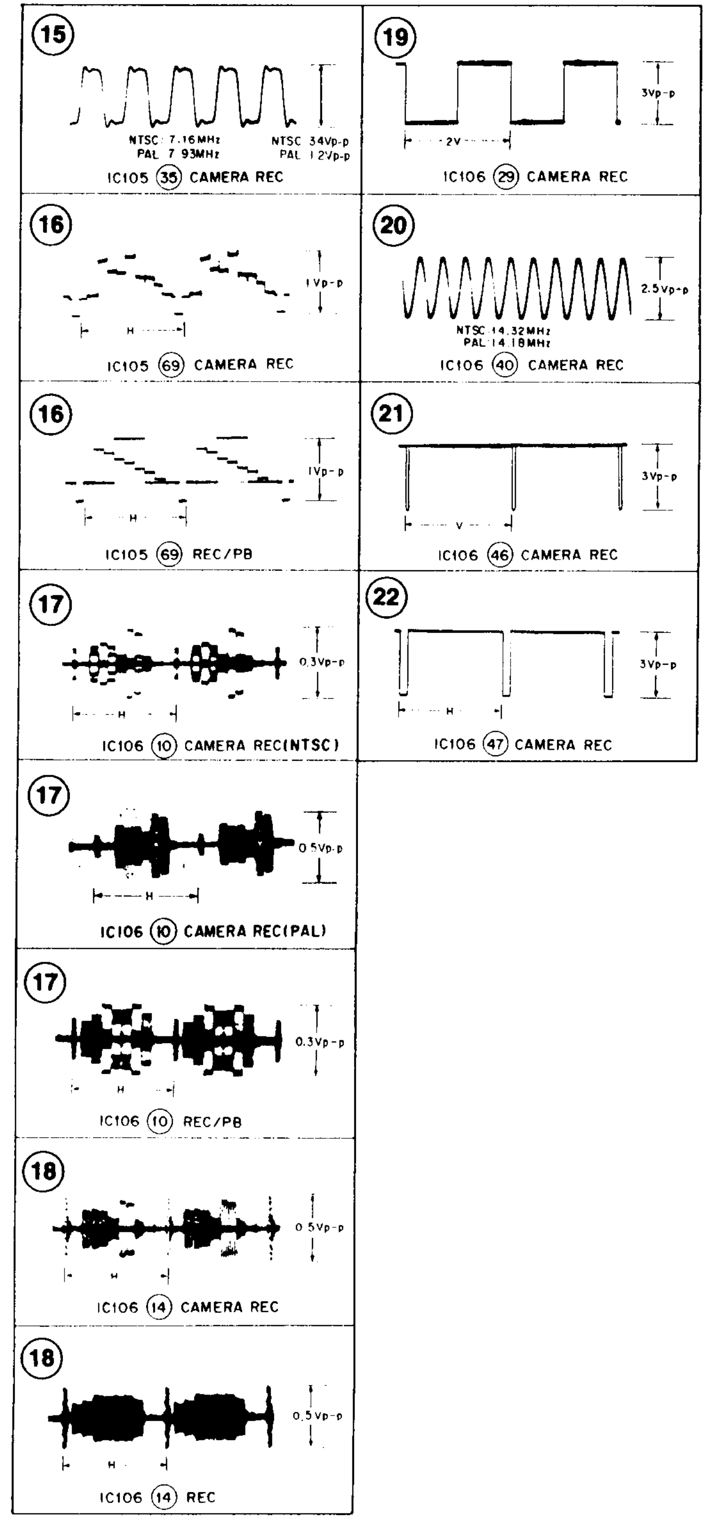
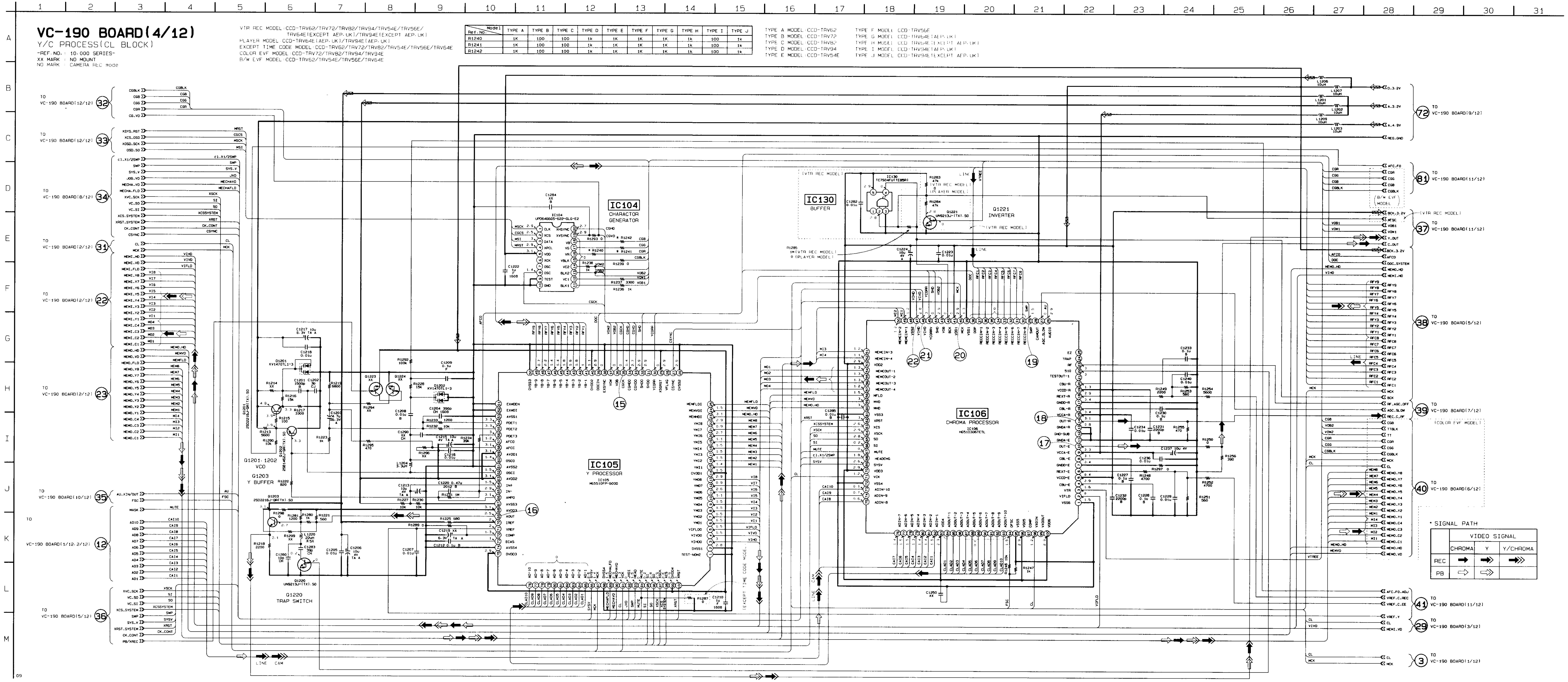
F
G
H
I
J
K
L
IC251
IRIS MOTOR
DRIVE
IC251 NJM2904V(TE2)
VCC
OUT2
IN2-
IN2+
OUT1
IN1-
IN1+
GND
Q251
2SD2216J-QR(TX).SO
AMP
R272 180k
R264 180k
R259 5600
C254 0.001u B
R263 180k
R258 100k
C256 0.033u B 2012
R256 1k
R257 22k
C255 0.22u B 2012
R267 1k
R254 10 1/10W 2012
C252 0.1u B
R260 15k
C274 0.1u B
IC253
HALL AMP
IRIS DRIVE
IC253 NJM3241V(TE2)
OUT4
IN4-
IN4+
GND
IN3+
IN3-
OUT3
OUT1
IN1-
IN1+
VCC
IN2+
IN2-
OUT2
R255 10k
C253 0.01u B
R253 18k
R252 100k
R271 100k
C261 0.01u B
C276 0.1u F
C267 0.01u B
R251 18k
R262 22k
C268 2.2u 6.3V TA
Q252
2SD2216J-QR(TX).SO
AMP
L252 10uH 2520
R265 18k
R266 1500
C251 0.01u B
C271 10u 4V TA A
C269 0.1u F
R261 330
HALL_OFFSET
HALL_REF
HALL_GAIN
TO
VC-190 BOARD(11/12)
24
D_3.2V
REG_GND
71
TO
VC-190 BOARD(9/12)
A_4.9V
MT_5.0V
MT_GND
HALL_AD
IRIS_PWM
FC_RST_SENS
25
TO
VC-190 BOARD(8/12)
LENS_RST_LED
ZM_RST_SENS1
THERMAL_AD
CN113 23P
BIAS(+)
HALL(+)
BIAS(-)
HALL(-)
CONT(-)
CONT(+)
DRIVE(-)
DRIVE(+)
ZM_A
ZM_B
ZM_B
ZM_A
FC_A
FC_B
FC_B
FC_A
ZM
SENSE_VCC
FC_RST
GND
ZM_RST
TEMP_COM
TEMP_OUT
ZOOM
LENS
BLOCK
Q253
2SB1462J-QR(TX).SO
ZOOM SENSOR SWITCH
R275 4700
R270 68k
R273 68k
R269 47k
C272 XX
* ZOOM LENS BLOCK is replaced as a block.
so that these SCHEMATIC DIAGRAM and
PRINTED WIRING BOARD are omitted.
IC252
FOCUS/ZOOM
MOTOR DRIVE
IC252 UPD16833GS-E2
C266 0.01u B
L253 10uH 3225
C259 0.01u B
C258 33u 6.3V TA B
C262 0.01u B
C260 0.01u B
C1H
C2H
DGND
VG
B1_FA
PGND2
B2_FB
VM2
B3_ZA
PGND4
B4_ZB
IN4
EN4
IN3
C1L
C2L
VC
VM1
A1_FA
PGND1
A2_FB
A3_ZA
PGND3
A4_ZB
VM3
IN1
EN1
IN2
EN2
IC255
FOCUS/ZOOM
PRE DRIVE
IC255 CXD2430N-T4
VDD
TEST1
SENS0
SENS1
EN1
DIR1B
DIR1A
EN0
DIR0B
DIR0A
TEST0
VDIN
CS
SCK
SIN
SOUT
CKOT
CKIN
XCLR
VSS
FB251 0uH
C263 1u F
CN202 13P
PITCH_AD
YAW_AD
MT_GND
XRST_POR
C_RESET
XCS_VST_AD
VC_SI2
VC_SO2
XVC_SCK2
D_3.2V
A_4.9V
REG_GND
CL
TO
SE-61 BOARD
CN451
(SEE PAGE 4-13)
R302 0
R303 0
R293 XX
R300 0
R295 XX
R299 XX
R298 XX
R296 XX
R294 0
R297 XX
R301 XX
VC_SI
VC_SO
XVC_SCK
XCS_SYSTEM
28
TO
VC-190 BOARD(8/12)
MEMI_VD
CL
29
TO
VC-190 BOARD(4/12)
EVER_3.15V
30
TO
VC-190 BOARD(12/12)
SYS_V
XVC_RST
VC_STBY
C_RESET
XCS_VST_AD
VC_SI2
VC_SO2
XVC_SCK2
XRST_POR
27
TO
VC-190 BOARD(8/12)
YAW_AD
PITCH_AD
26
TO
VC-190 BOARD(8/12)
09

- **For schematic diagrams.**
- Refer to page 4–17 for Printed Wiring Board.

VC-190 BOARD(CL BLOCK)





VC-190 BOARD(4/12)

Y/C PROCESS(CL BLOCK)

-REF. NO.: 10,000 SERIES-
XX MARK : NO MOUNT
NO MARK : CAMERA REC mode

VTR REC MODEL:CCD-TRV62/TRV72/TRV82/TRV94/TRV54E/TRV56E/TRV64E(EXCEPT AEP, UK)/TRV94E(EXCEPT AEP, UK)
PLAYER MODEL:CCD-TRV64E(AEP, UK)/TRV94E(AEP, UK)
EXCEPT TIME CODE MODEL:CCD-TRV62/TRV72/TRV82/TRV54E/TRV56E/TRV64E
COLOR EVF MODEL:CCD-TRV72/TRV82/TRV94/TRV94E
B/W EVF MODEL:CCD-TRV62/TRV54E/TRV56E/TRV64E

Model / Ref. No.	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TYPE I	TYPE J
R1240	1K	100	100	1k	1K	1K	1K	1k	100	1k
R1241	1K	100	100	1k	1K	1K	1K	1k	100	1k
R1242	1K	100	100	1k	1K	1K	1K	1k	100	1k

TYPE A MODEL:CCD-TRV62
TYPE B MODEL:CCD-TRV72
TYPE C MODEL:CCD-TRV82
TYPE D MODEL:CCD-TRV94
TYPE E MODEL:CCD-TRV54E
TYPE F MODEL:CCD-TRV56E
TYPE G MODEL:CCD-TRV64E(AEP, UK)
TYPE H MODEL:CCD-TRV64E(EXCEPT AEP, UK)
TYPE I MODEL:CCD-TRV94E(AEP, UK)
TYPE J MODEL:CCD-TRV94E(EXCEPT AEP, UK)

TO VC-190 BOARD(12/12) (32)
TO VC-190 BOARD(12/12) (33)
TO VC-190 BOARD(8/12) (34)
TO VC-190 BOARD(12/12) (31)
TO VC-190 BOARD(12/12) (22)
TO VC-190 BOARD(12/12) (23)
TO VC-190 BOARD(10/12) (35)
TO VC-190 BOARD(1/12,2/12) (12)
TO VC-190 BOARD(5/12) (36)
IC104
CHARACTOR GENERATOR
IC130
BUFFER
Q1221
INVERTER
IC105
Y PROCESSOR
IC106
CHROMA PROCESSOR
Q1201,1202
VCO
Q1203
Y BUFFER
Q1220
TRAP SWITCH
TO VC-190 BOARD(9/12) (72)
TO VC-190 BOARD(11/12) (81)
TO VC-190 BOARD(11/12) (37)
TO VC-190 BOARD(5/12) (38)
TO VC-190 BOARD(7/12) (39)
TO VC-190 BOARD(6/12) (40)
TO VC-190 BOARD(11/12) (41)
TO VC-190 BOARD(3/12) (29)
TO VC-190 BOARD(1/12) (3)
LINE
CAM

• SIGNAL PATH

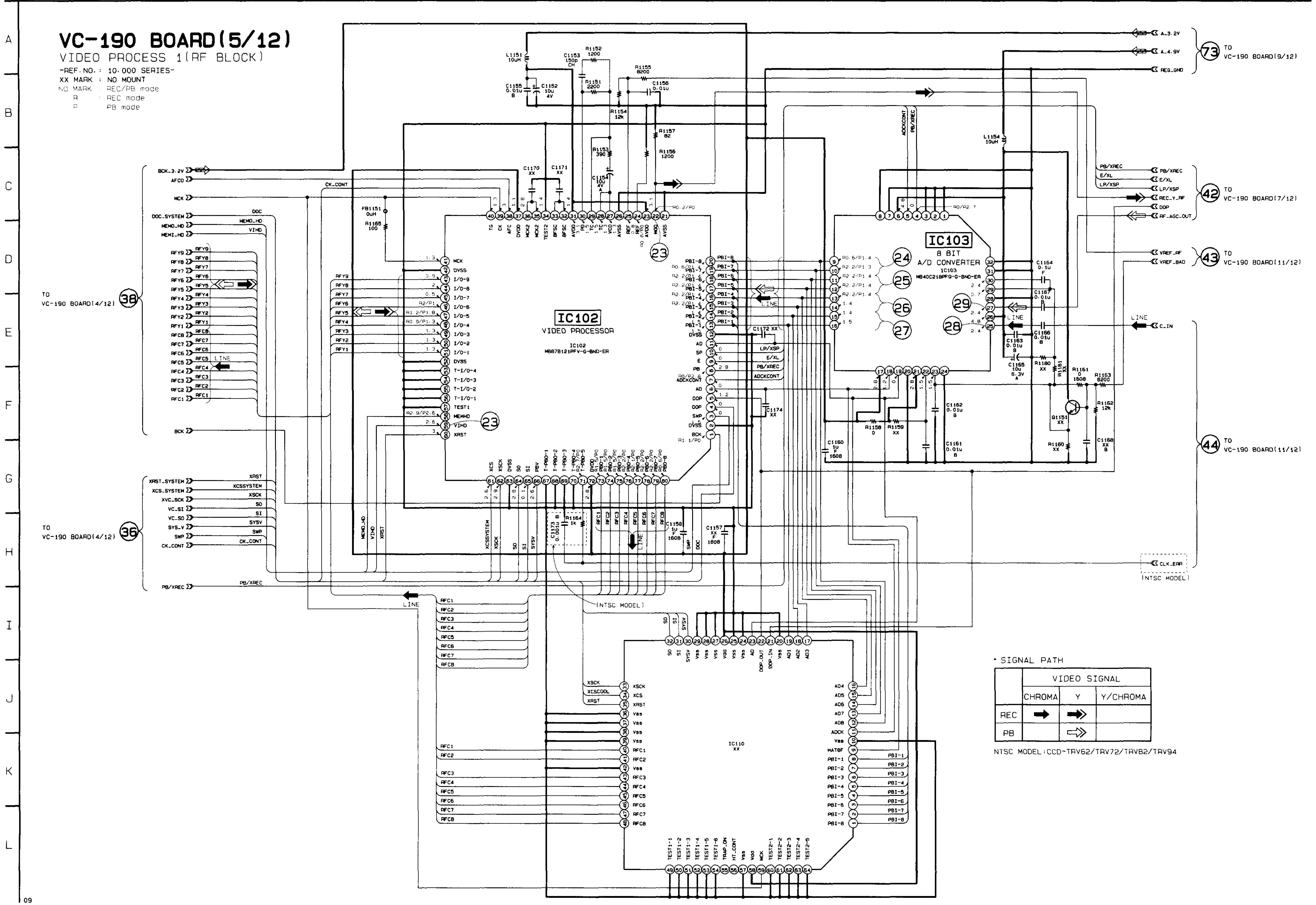
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡》	➡》》
PB	⇨	⇨》	

- **For schematic diagrams.**
- Refer to page 4–17 for Printed Wiring Board.

VC-190 BOARD(5/12)

VIDEO PROCESS 1(RF BLOCK)

-REF.NO. : 10,000 SERIES-
XX MARK : NO MOUNT
NO MARK : REC/PB mode
R : REC mode
P : PB mode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H
I
J
K
L
IC102
VIDEO PROCESSOR
IC102
MB87B121PFV-G-BND-ER
IC103
8 BIT
A/D CONVERTER
IC103
MB40C218PFQ-G-BND-ER
IC110
XX
TO VC-190 BOARD(9/12)
TO VC-190 BOARD(7/12)
TO VC-190 BOARD(11/12)
TO VC-190 BOARD(11/12)
TO VC-190 BOARD(4/12)
TO VC-190 BOARD(4/12)
A_3.2V
A_4.9V
REG_GND
PB/XREC
E/XL
LP/XSP
REC_Y_RF
DOP
RF_AGC_OUT
VREF_RF
VREF_BAD
C_IN
CLK_ERR
(NTSC MODEL)
BCK_3.2V
AFCO
MCK
DOC_SYSTEM
MEMO_HD
MEMI_HD
RFY9
RFY8
RFY7
RFY6
RFY5
RFY4
RFY3
RFY2
RFY1
RFC8
RFC7
RFC6
RFC5
RFC4
RFC3
RFC2
RFC1
BCK
XRST_SYSTEM
XCS_SYSTEM
XVC_SCK
VC_SI
VC_SO
SYS_V
SWP
CK_CONT
PB/XREC
LINE
L1151 10uH
C1153 150p
R1152 1200
R1155 8200
C1155 0.01u
C1152 10u 4V
R1151 2200
C1156 0.01u
R1154 12k
R1157 82
R1153 390
R1156 1200
C1170 XX
C1171 XX
C1154 10u 6V
FB1151 0uH
R1165 100
L1154 10uH
C1164 0.1u
C1167 0.01u
C1166 0.01u
C1163 0.01u
C1165 10u 6.3V
R1160 XX
R1161 0
R1163 8200
R1162 12k
Q1151 XX
C1162 0.01u
C1161 0.01u
C1168 XX
C1160 1u
R1158 0
R1159 XX
C1172 XX
C1174 XX
C1173 0.0001u
R1164 1k
C1158 1u
C1157 XX
23
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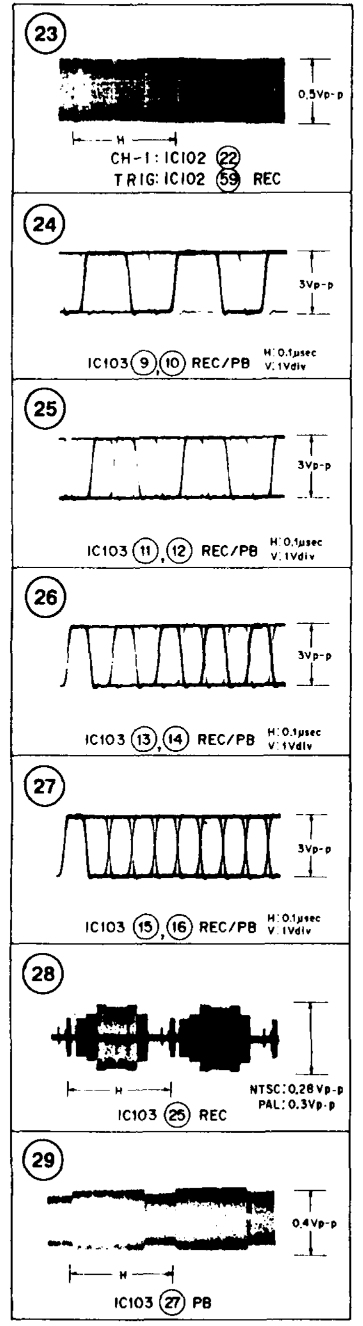
• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡》	
PB		⇨》	

NTSC MODEL:CCD-TRV62/TRV72/TRV82/TRV94

VC-190 BOARD (RF BLOCK)

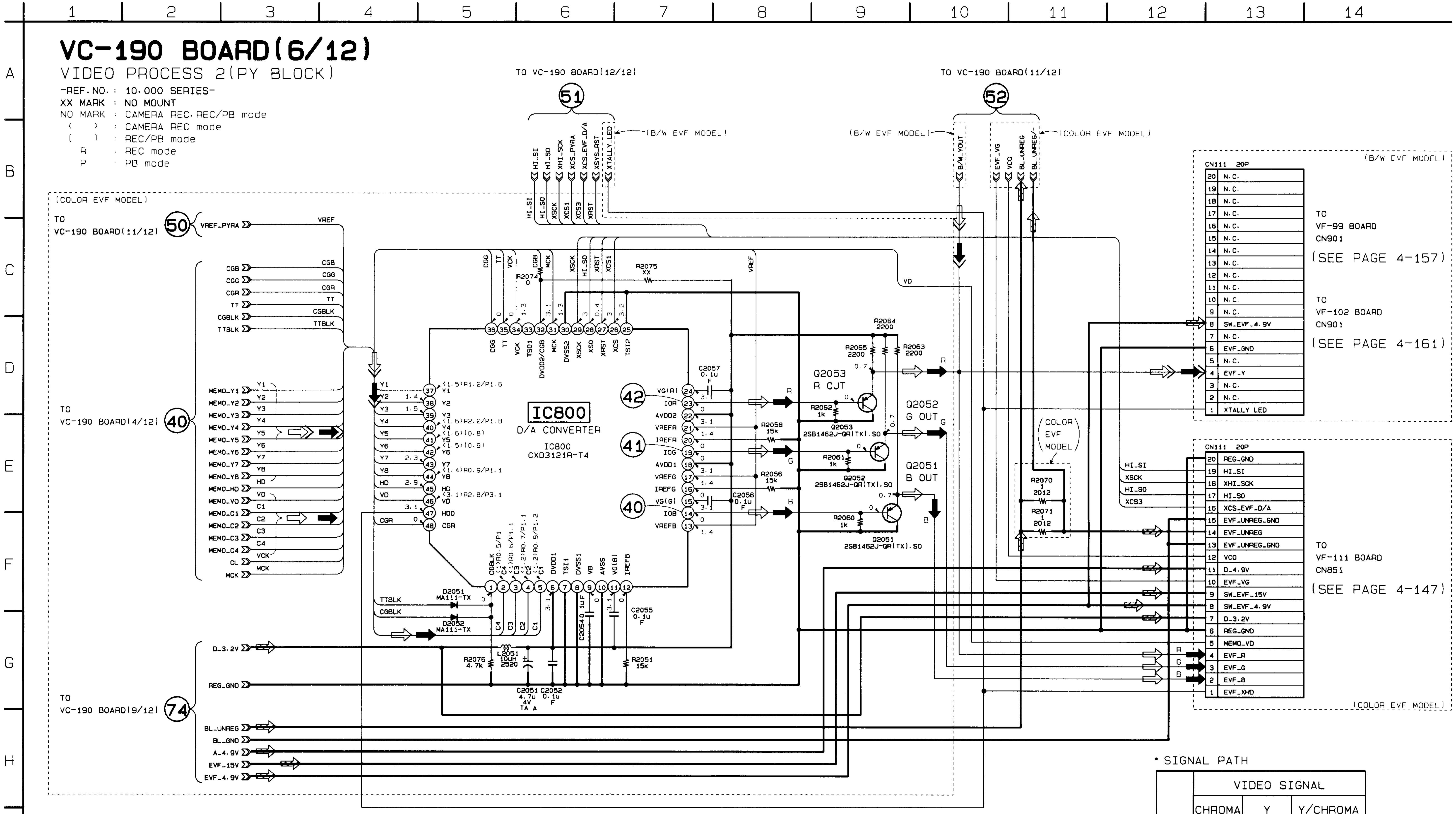


- For schematic diagrams.
- Refer to page 4–17 for Printed Wiring Board.

VC-190 BOARD(6/12)

VIDEO PROCESS 2(PY BLOCK)

-REF. NO. : 10,000 SERIES-
XX MARK : NO MOUNT
NO MARK : CAMERA REC, REC/PB mode
( ) : CAMERA REC mode
[ ] : REC/PB mode
R : REC mode
P : PB mode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A
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E
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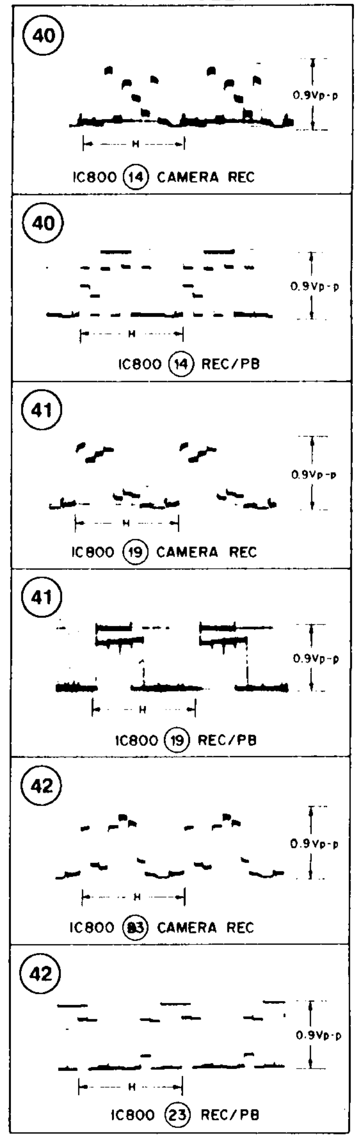
G
H
I
TO VC-190 BOARD(12/12)
(51)
HI_SI
HI_SO
XHI_SCK
XCS_PYRA
XCS_EVF_D/A
XSYS_RST
XTALLY_LED
(B/W EVF MODEL)
TO VC-190 BOARD(11/12)
(52)
(B/W EVF MODEL)
B/W_YOUT
EVF_VG
VCO
BL_UNREG
BL_UNREG/-
(COLOR EVF MODEL)
(COLOR EVF MODEL)
TO VC-190 BOARD(11/12)
(50)
VREF_PYRA
VREF
CGB
CGG
CGR
TT
CGBLK
TTBLK
TO VC-190 BOARD(4/12)
(40)
MEMO_Y1
MEMO_Y2
MEMO_Y3
MEMO_Y4
MEMO_Y5
MEMO_Y6
MEMO_Y7
MEMO_Y8
MEMO_HD
MEMO_VD
MEMO_C1
MEMO_C2
MEMO_C3
MEMO_C4
CL
MCK
TO VC-190 BOARD(9/12)
(74)
D_3.2V
REG_GND
BL_UNREG
BL_GND
A_4.9V
EVF_15V
EVF_4.9V
IC800
D/A CONVERTER
IC800
CXD3121R-T4
(42)
(41)
(40)
VG(R)
IOR
AVDD2
VREFR
IREFR
IOG
AVDD1
VREFG
IREFG
VG(G)
IOB
VREFB
CGG
TT
VCK
TSO1
DVDD2/CGB
MCK
DVSS2
XSCK
XSO
XRST
XCS
TSI2
CGBLK
VG(B)
IREFB
DVDD1
TSI1
DVSS1
VB
AVSS
R2074 0
R2075 XX
C2057 0.1u F
Q2053 R OUT
Q2052 G OUT
Q2051 B OUT
R2064 2200
R2065 2200
R2063 2200
R2062 1k
R2061 1k
R2060 1k
R2058 15k
R2056 15k
C2056 0.1u F
Q2053 2SB1462J-QR(TX).SO
Q2052 2SB1462J-QR(TX).SO
Q2051 2SB1462J-QR(TX).SO
D2051 MA111-TX
D2052 MA111-TX
TTBLK
CGBLK
R2076 4.7k
L2051 10uH
C2051 4.7u 4V TA A
C2052 0.1u F
C2054 0.1uF
C2055 0.1u F
R2051 15k
(COLOR EVF MODEL)
R2070 1 2012
R2071 1 2012
VD
HI_SI
XSCK
HI_SO
XCS3
CN111 20P
(B/W EVF MODEL)
20 N.C.
19 N.C.
18 N.C.
17 N.C.
16 N.C.
15 N.C.
14 N.C.
13 N.C.
12 N.C.
11 N.C.
10 N.C.
9 N.C.
8 SW_EVF_4.9V
7 N.C.
6 EVF_GND
5 N.C.
4 EVF_Y
3 N.C.
2 N.C.
1 XTALLY LED
TO VF-99 BOARD CN901
(SEE PAGE 4-157)
TO VF-102 BOARD CN901
(SEE PAGE 4-161)
CN111 20P
20 REG_GND
19 HI_SI
18 XHI_SCK
17 HI_SO
16 XCS_EVF_D/A
15 EVF_UNREG_GND
14 EVF_UNREG
13 EVF_UNREG_GND
12 VCO
11 D_4.9V
10 EVF_VG
9 SW_EVF_15V
8 SW_EVF_4.9V
7 D_3.2V
6 REG_GND
5 MEMO_VD
4 EVF_R
3 EVF_G
2 EVF_B
1 EVF_XHD
TO VF-111 BOARD CN851
(SEE PAGE 4-147)
(COLOR EVF MODEL)
09

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡➡	
PB	⇨	⇨⇨	

COLOR EVF MODEL:CCD-TRV72/TRV82/TRV94/TRV94E
B/W EVF MODEL:CCD-TRV62/TRV54E/TRV56E/TRV64E

VC-190 BOARD (PY BLOCK)
(COLOR EVF MODEL)

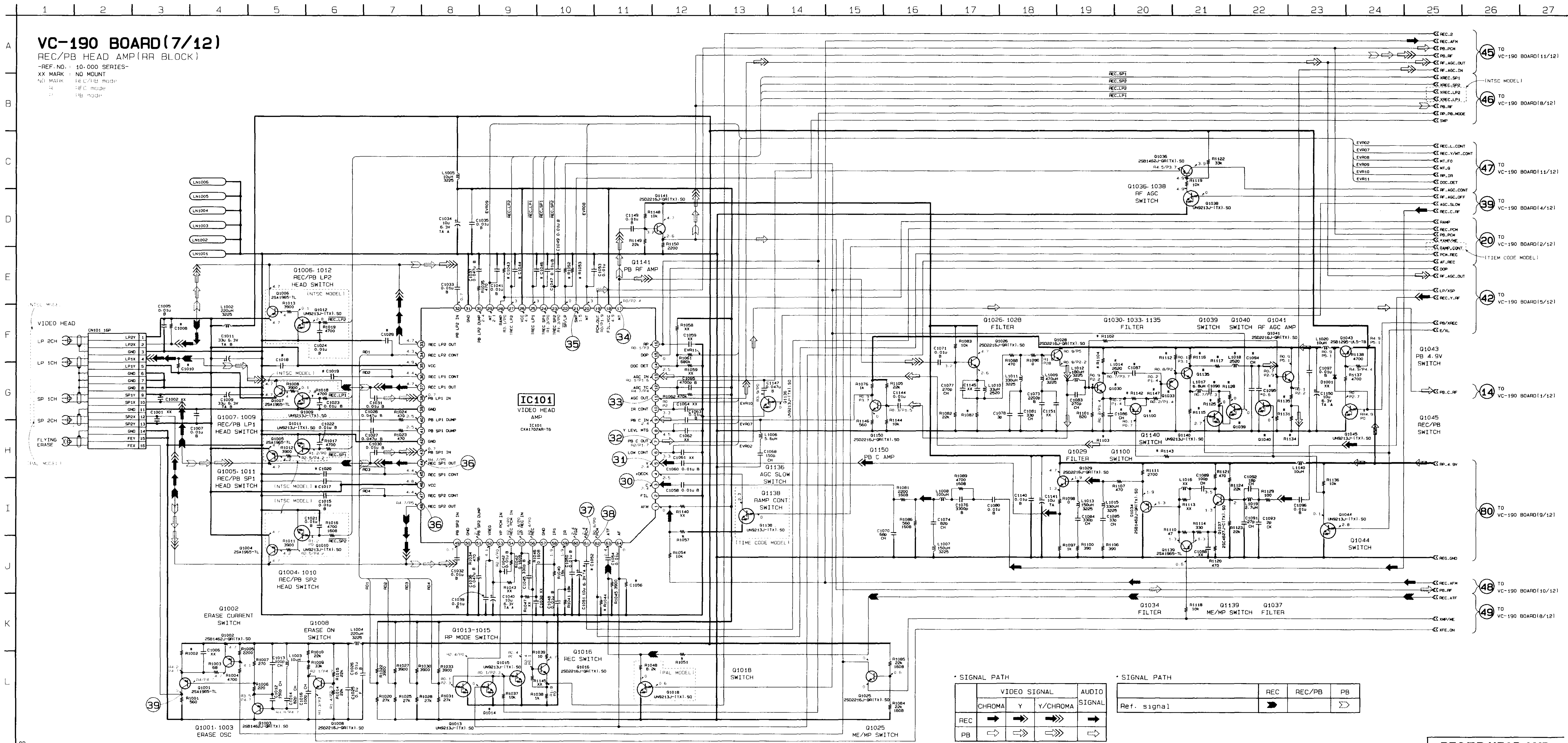


- **For schematic diagrams.**
- Refer to page 4–17 for Printed Wiring Board.

VC-190 BOARD(7/12)

REC/PB HEAD AMP(RR BLOCK)

-REF.NO. : 10,000 SERIES-
XX MARK : NO MOUNT
NO MARK : REC/PB mode
R : REC mode
P : PB mode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A
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C
D
E
F
G
H
I
J
K
L
VIDEO HEAD
LP 2CH
LP 1CH
SP 1CH
SP 2CH
FLYING ERASE
CN101 16P
LN1006
LN1005
LN1004
LN1003
LN1002
LN1001
Q1006, 1012 REC/PB LP2 HEAD SWITCH
Q1007, 1009 REC/PB LP1 HEAD SWITCH
Q1005, 1011 REC/PB SP1 HEAD SWITCH
Q1004, 1010 REC/PB SP2 HEAD SWITCH
(NTSC MODEL)
IC101 VIDEO HEAD AMP CXA1702AR-T6
Q1141 PB RF AMP
Q1136 AGC SLOW SWITCH
Q1138 RAMP CONT SWITCH
(TIME CODE MODEL)
Q1002 ERASE CURRENT SWITCH
Q1001-1003 ERASE OSC
Q1008 ERASE ON SWITCH
Q1013-1015 RP MODE SWITCH
Q1016 REC SWITCH
Q1018 SWITCH
(PAL MODEL)
Q1025 ME/MP SWITCH
Q1036-1038 RF AGC SWITCH
Q1026-1028 FILTER
Q1030-1033, 1135 FILTER
Q1039 SWITCH
Q1040 SWITCH
Q1041 RF AGC AMP
Q1043 PB 4.9V SWITCH
Q1045 REC/PB SWITCH
Q1150 PB C AMP
Q1029 FILTER
Q1100 SWITCH
Q1140 SWITCH
Q1044 SWITCH
Q1034 FILTER
Q1139 ME/MP SWITCH
Q1037 FILTER
TO VC-190 BOARD(11/12)
TO VC-190 BOARD(8/12)
TO VC-190 BOARD(11/12)
TO VC-190 BOARD(4/12)
TO VC-190 BOARD(2/12)
TO VC-190 BOARD(5/12)
TO VC-190 BOARD(1/12)
TO VC-190 BOARD(9/12)
TO VC-190 BOARD(10/12)
TO VC-190 BOARD(8/12)
(NTSC MODEL)
(TIME CODE MODEL)
(45)
(46)
(47)
(39)
(20)
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(14)
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TIME CODE MODEL : CCD-TRV94/TRV94E
EXCEPT TIME CODE MODEL : CCD-TRV62/TRV72/TRV82/TRV54E/TRV56E/TRV64E

Model / Ref.No.	TIME CODE	EXCEPT TIME CODE
C1043	XX	0
C1052	0.01	XX
C1056	XX	0
Q1014	UN9213J-(TX).SO	XX
R1044	XX	0

NTSC MODEL : CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL : CCD-TRV54E/TRV56E/TRV64E/TRV94E
Hi8 MODEL : CCD-TRV62/TRV72/TRV82/TRV94/TRV64E/TRV94E
STANDERD 8 MODEL : CCD-TRV54E/TRV56E

Model / Ref.No.	NTSC	PAL	
	Hi8	Hi8	STANDARD 8
C1008	XX	0	0
C1010	XX	0	0
C1017	XX	0.01	0.01
C1018	XX	0.01	0.01
C1019	0.01	XX	XX
C1020	XX	0.01	0.01
C1029	0.01	XX	XX
C1044	0.01	XX	XX
C1046	0.01	XX	XX
C1086	10p	10p	XX
C1087	33p	39p	XX
C1090	39p	68p	XX
C1094	10p	10p	XX
C1095	39p	33p	XX
L1014	27uH	27uH	XX
L1018	10uH	10uH	XX
Q1030	2SC4627J-C(TX).SO	2SC4627J-C(TX).SO	XX
Q1033	2SB1462J-QR(TX).SO	2SB1462J-QR(TX).SO	XX
Q1039	UN9213J-(TX).SO	XX	XX
Q1040	UN9213J-(TX).SO	UN9213J-(TX).SO	XX
Q1100	2SA1956-TL	XX	XX
Q1135	2SC4627J-C(TX).SO	2SC4627J-C(TX).SO	XX
Q1140	UN9213J-(TX).SO	UN9213J-(TX).SO	XX
R1002	39	33	33
R1051	22k	15k	15k
R1052	0	XX	XX
R1053	XX	0	0
R1057	4.7k	5.6k	5.6k
R1087	2.2k	1.5k	1.5k
R1102	XX	XX	0
R1103	330	470	XX
R1104	330	470	XX
R1112	1k	1k	XX
R1115	470	470	XX
R1116	560	330	XX
R1117	330	390	XX
R1125	330	330	XX
R1128	150	XX	XX
R1131	3.9k	3.9k	XX
R1134	1.5k	2.2k	2.2k
R1135	270	0	0
R1142	1k	820	XX
R1143	10k	XX	XX
R1147	820	0	XX

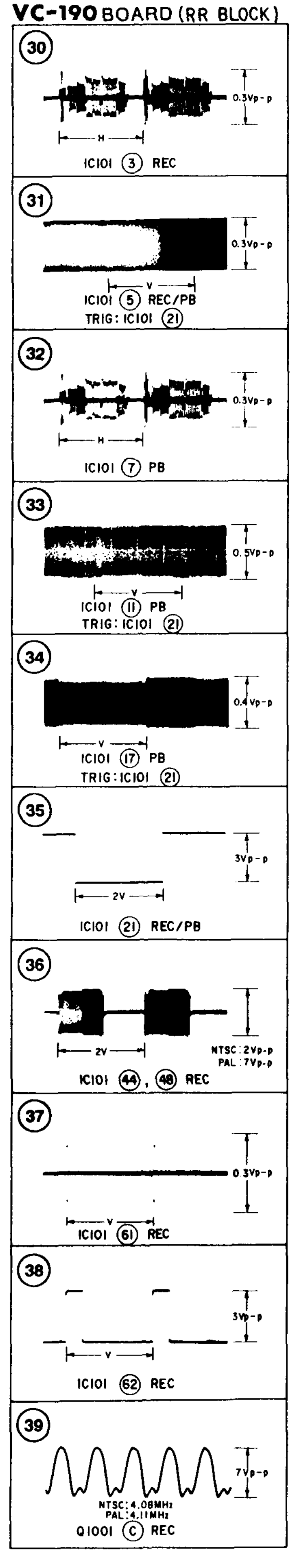
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨

• SIGNAL PATH

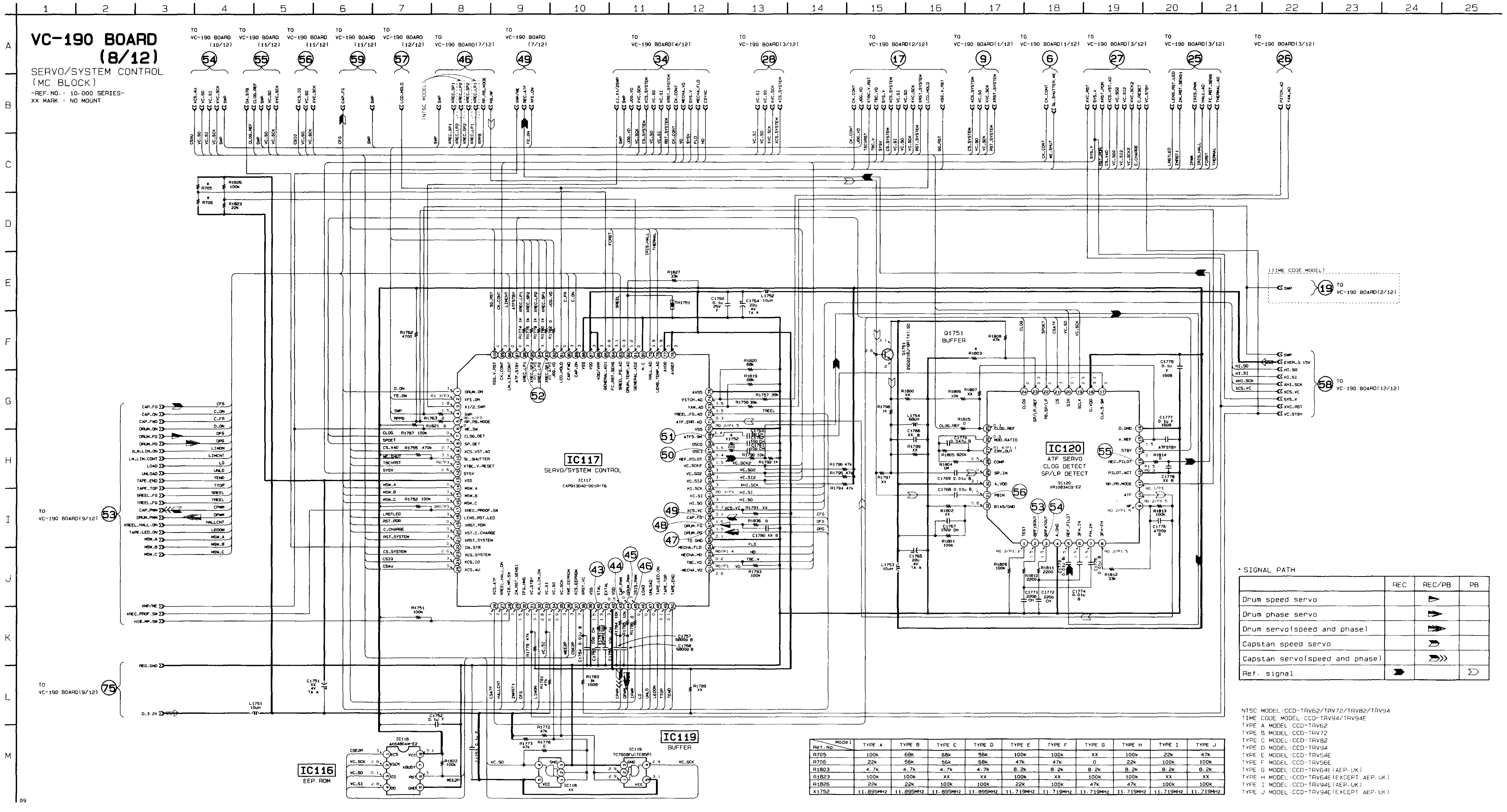
	REC	REC/PB	PB
Ref. signal	➤		▷

VC-190 BOARD (RR BLOCK)



REC/PB HEAD AMP
VC-190 (7/12)

- For schematic diagrams.
- Refer to page 4-17 for Printed Wiring Board.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K
L
M
VC-190 BOARD (8/12)
SERVO/SYSTEM CONTROL (MC BLOCK)
-REF.NO.: 10-000 SERIES-
XX MARK : NO MOUNT
TO VC-190 BOARD(10/12)
TO VC-190 BOARD(11/12)
TO VC-190 BOARD(7/12)
TO VC-190 BOARD(4/12)
TO VC-190 BOARD(3/12)
TO VC-190 BOARD(2/12)
TO VC-190 BOARD(1/12)
TO VC-190 BOARD(9/12)
TO VC-190 BOARD(12/12)
(TIME CODE MODEL)
IC117
SERVO/SYSTEM CONTROL
IC120
ATF SERVO
CLOG DETECT
SP/LP DETECT
Q1751
BUFFER
IC116
EEP ROM
IC119
BUFFER
09

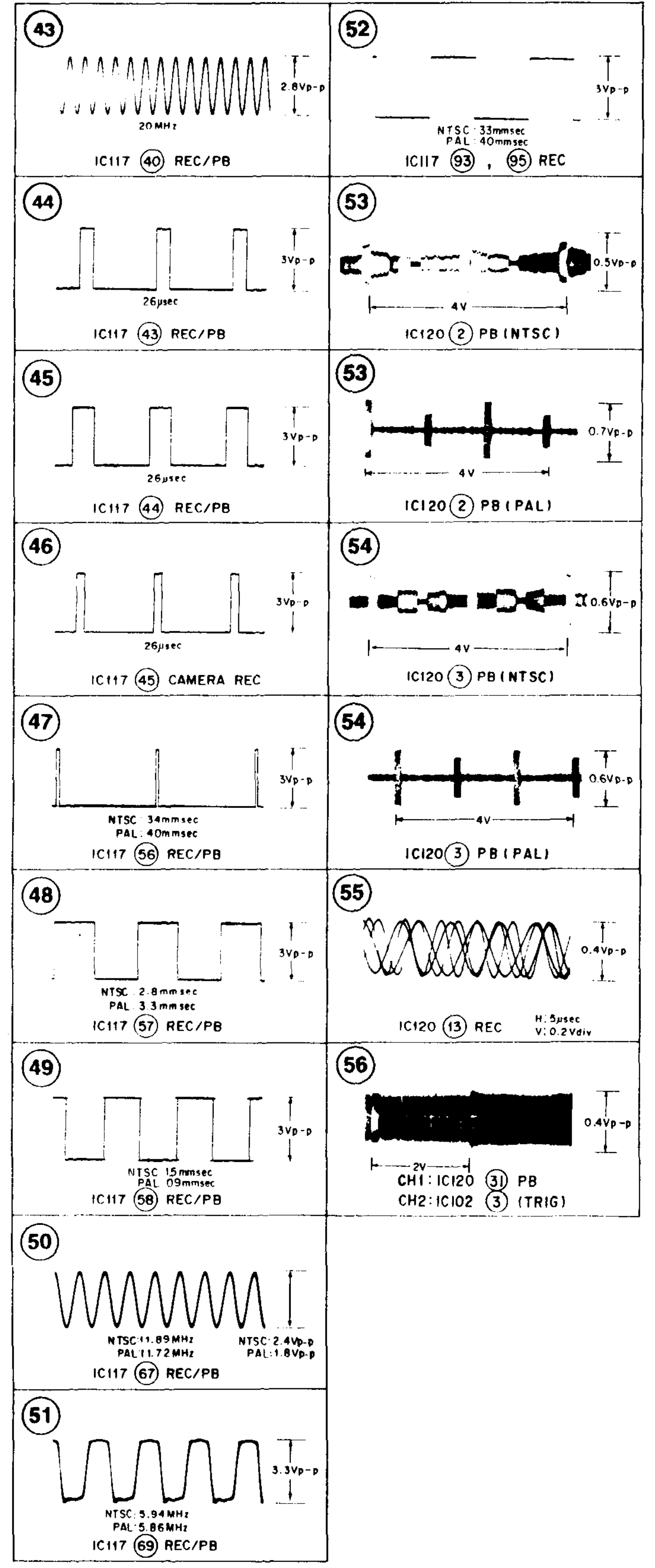
• SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo(speed and phase)		▷▷▷	
Capstan speed servo		➢	
Capstan servo(speed and phase)		➢»	
Ref. signal	➤		▷

Model / Ref.No.	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TYPE I	TYPE J
R705	100k	68k	68k	56k	100k	100k	XX	100k	22k	47k
R706	22k	56k	56k	68k	47k	47k	0	22k	100k	100k
R1803	4.7k	4.7k	4.7k	4.7k	8.2k	8.2k	8.2k	8.2k	8.2k	8.2k
R1823	100k	100k	XX	XX	100k	XX	100k	100k	XX	XX
R1826	22k	22k	100k	100k	22k	100k	47k	47k	100k	100k
X1752	11.895MHz	11.895MHz	11.895MHz	11.895MHz	11.719MHz	11.719MHz	11.719MHz	11.719MHz	11.719MHz	11.719MHz

NTSC MODEL:CCD-TRV62/TRV72/TRV82/TRV94
TIME CODE MODEL:CCD-TRV94/TRV94E
TYPE A MODEL:CCD-TRV62
TYPE B MODEL:CCD-TRV72
TYPE C MODEL:CCD-TRV82
TYPE D MODEL:CCD-TRV94
TYPE E MODEL:CCD-TRV54E
TYPE F MODEL:CCD-TRV56E
TYPE G MODEL:CCD-TRV64E(AEP, UK)
TYPE H MODEL:CCD-TRV64E(EXCEPT AEP, UK)
TYPE I MODEL:CCD-TRV94E(AEP, UK)
TYPE J MODEL:CCD-TRV94E(EXCEPT AEP, UK)

VC-190 BOARD (MC BLOCK)



- **For schematic diagrams.**
- Refer to page 4–17 for Printed Wiring Board.

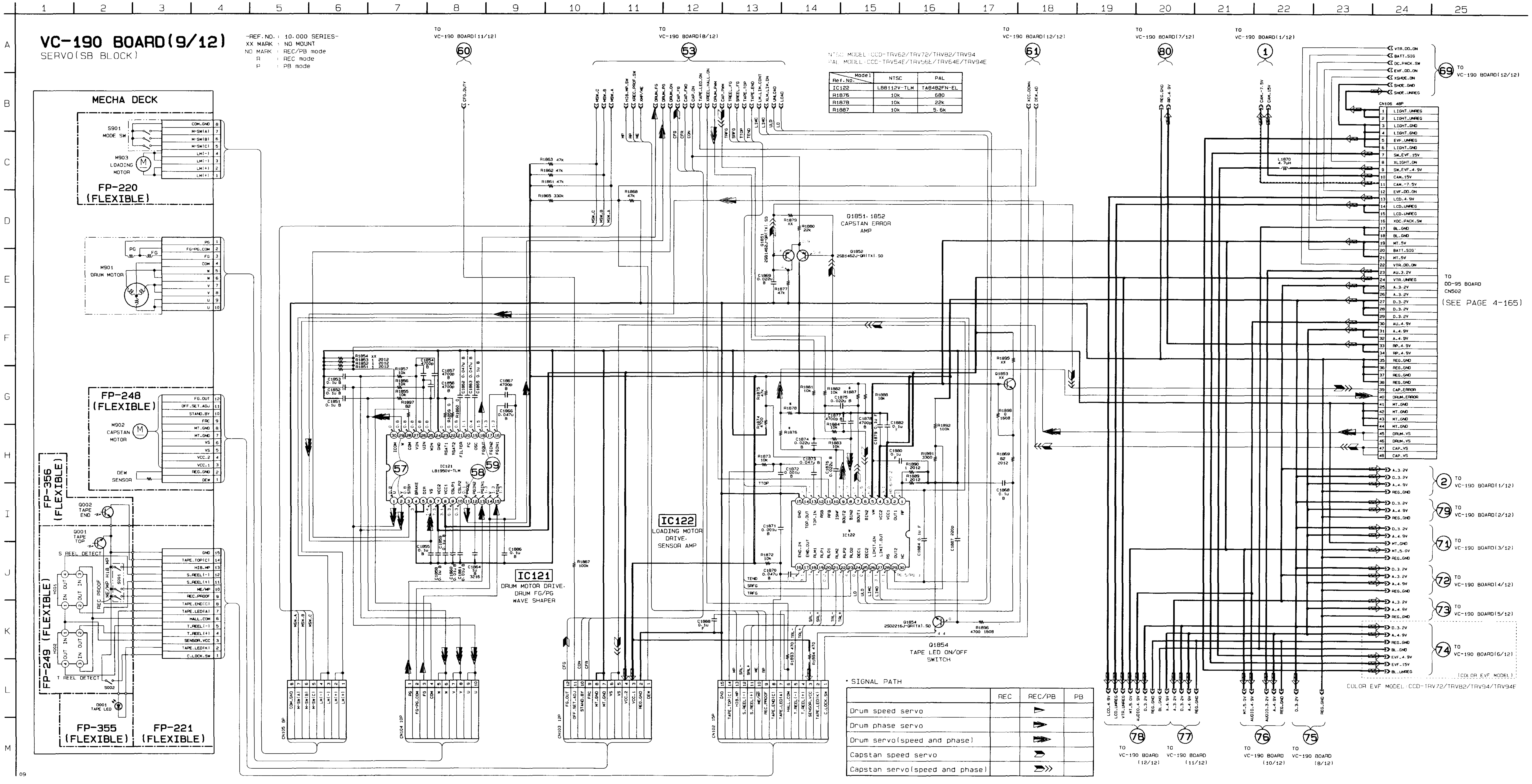
VC-190 BOARD(9/12)

SERVO(SB BLOCK)

-REF.NO. : 10.000 SERIES-
XX MARK : NO MOUNT
NO MARK : REC/PB mode
R : REC mode
P : PB mode

NTSC MODEL : CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL : CCD-TRV54E/TRV56E/TRV64E/TRV94E

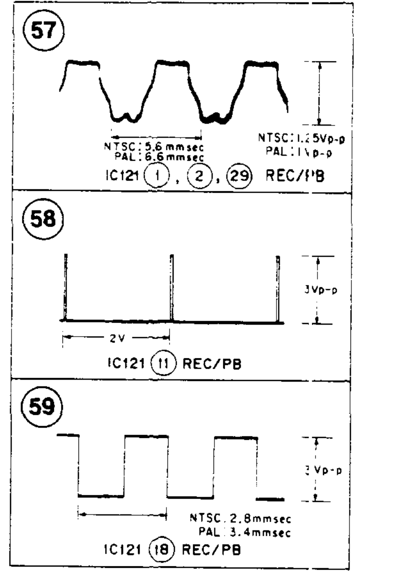
Ref. No. \ Model	NTSC	PAL
IC122	LB8112V-TLM	TA8482FN-EL
R1876	10k	680
R1878	10k	22k
R1887	10k	5.6k


MECHA DECK
S901 MODE SW
M903 LOADING MOTOR
FP-220 (FLEXIBLE)
M901 DRUM MOTOR
FP-248 (FLEXIBLE)
M902 CAPSTAN MOTOR
DEW SENSOR
FP-356 (FLEXIBLE)
Q002 TAPE END
Q001 TAPE TOP
S REEL DETECT
T REEL DETECT
FP-249 (FLEXIBLE)
S002
D001 TAPE LED
FP-355 (FLEXIBLE)
FP-221 (FLEXIBLE)
TO VC-190 BOARD(11/12) 60
TO VC-190 BOARD(8/12) 53
TO VC-190 BOARD(12/12) 61
TO VC-190 BOARD(7/12) 80
TO VC-190 BOARD(1/12) 1
69 TO VC-190 BOARD(12/12)
Q1851, 1852 CAPSTAN ERROR AMP
CN106 48P
TO DD-95 BOARD CN502 (SEE PAGE 4-165)
2 TO VC-190 BOARD(1/12)
79 TO VC-190 BOARD(2/12)
71 TO VC-190 BOARD(3/12)
72 TO VC-190 BOARD(4/12)
73 TO VC-190 BOARD(5/12)
74 TO VC-190 BOARD(6/12)
(COLOR EVF MODEL)
COLOR EVF MODEL : CCD-TRV72/TRV82/TRV94/TRV94E
IC121 LB1950V-TLM
IC121 DRUM MOTOR DRIVE, DRUM FG/PG WAVE SHAPER
IC122 LOADING MOTOR DRIVE, SENSOR AMP
Q1854 TAPE LED ON/OFF SWITCH
CN105 8P
CN104 10P
CN103 12P
CN102 15P
78 TO VC-190 BOARD (12/12)
77 TO VC-190 BOARD (11/12)
76 TO VC-190 BOARD (10/12)
75 TO VC-190 BOARD (8/12)

• SIGNAL PATH

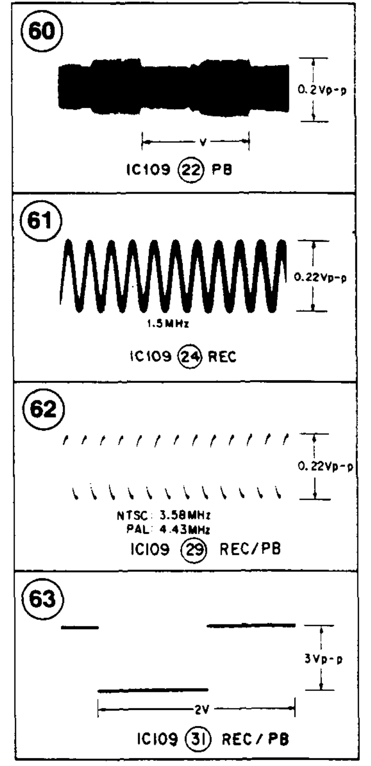
	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		➤	
Drum servo(speed and phase)		➤➤	
Capstan speed servo		➤	
Capstan servo(speed and phase)		➤》	

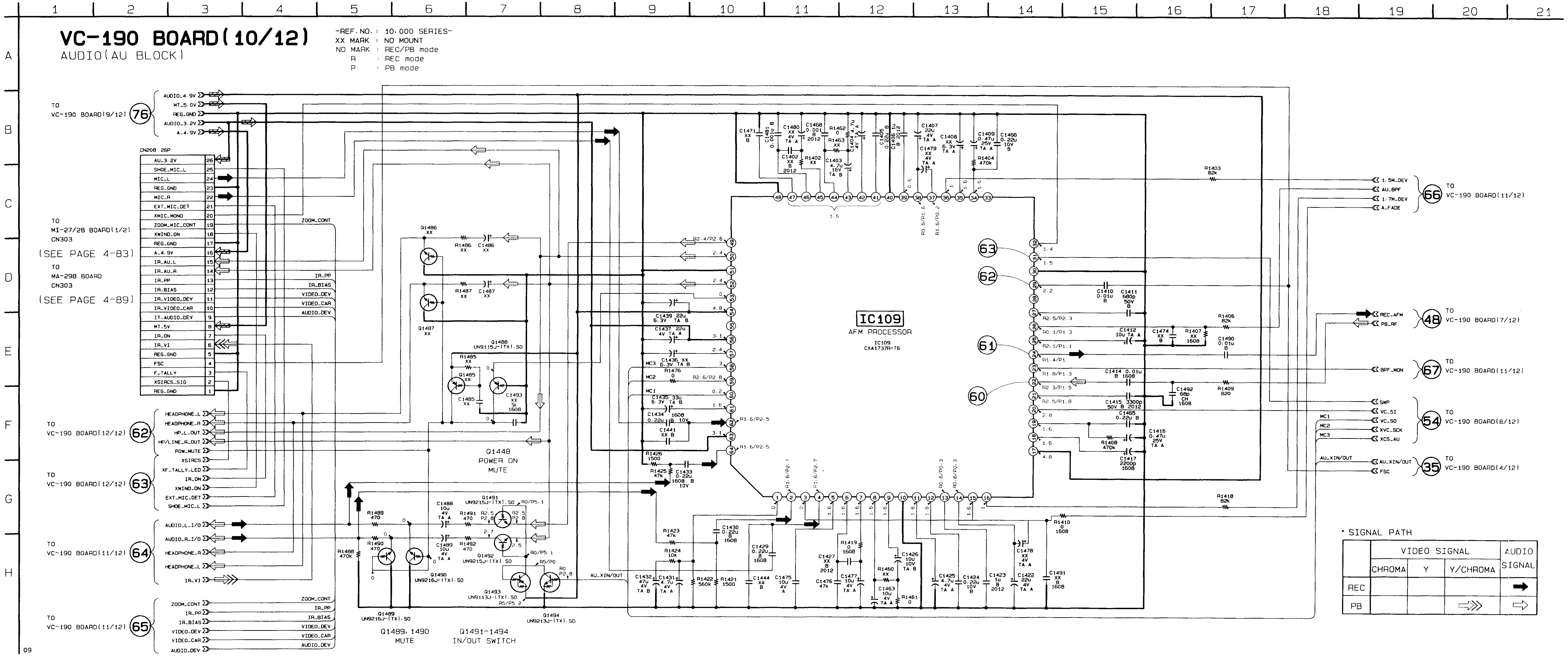
VC-190 BOARD (SB BLOCK)



- For schematic diagrams.
- Refer to page 4–17 for Printed Wiring Board.

VC-190 BOARD (AU BLOCK)




VC-190 BOARD(10/12)
AUDIO(AU BLOCK)
-REF.NO.: 10,000 SERIES-
XX MARK : NO MOUNT
NO MARK : REC/PB mode
R : REC mode
P : PB mode
TO VC-190 BOARD(9/12) 76
CN208 26P
TO MI-27/28 BOARD(1/2) CN303
(SEE PAGE 4-83)
TO MA-298 BOARD CN303
(SEE PAGE 4-89)
TO VC-190 BOARD(12/12) 62
TO VC-190 BOARD(12/12) 63
TO VC-190 BOARD(11/12) 64
TO VC-190 BOARD(11/12) 65
IC109
AFM PROCESSOR
IC109 CXA1737R-T6
Q1448
POWER ON
MUTE
Q1489,1490
MUTE
Q1491-1494
IN/OUT SWITCH
TO VC-190 BOARD(11/12) 66
TO VC-190 BOARD(7/12) 48
TO VC-190 BOARD(11/12) 67
TO VC-190 BOARD(8/12) 54
TO VC-190 BOARD(4/12) 35
09

* SIGNAL PATH

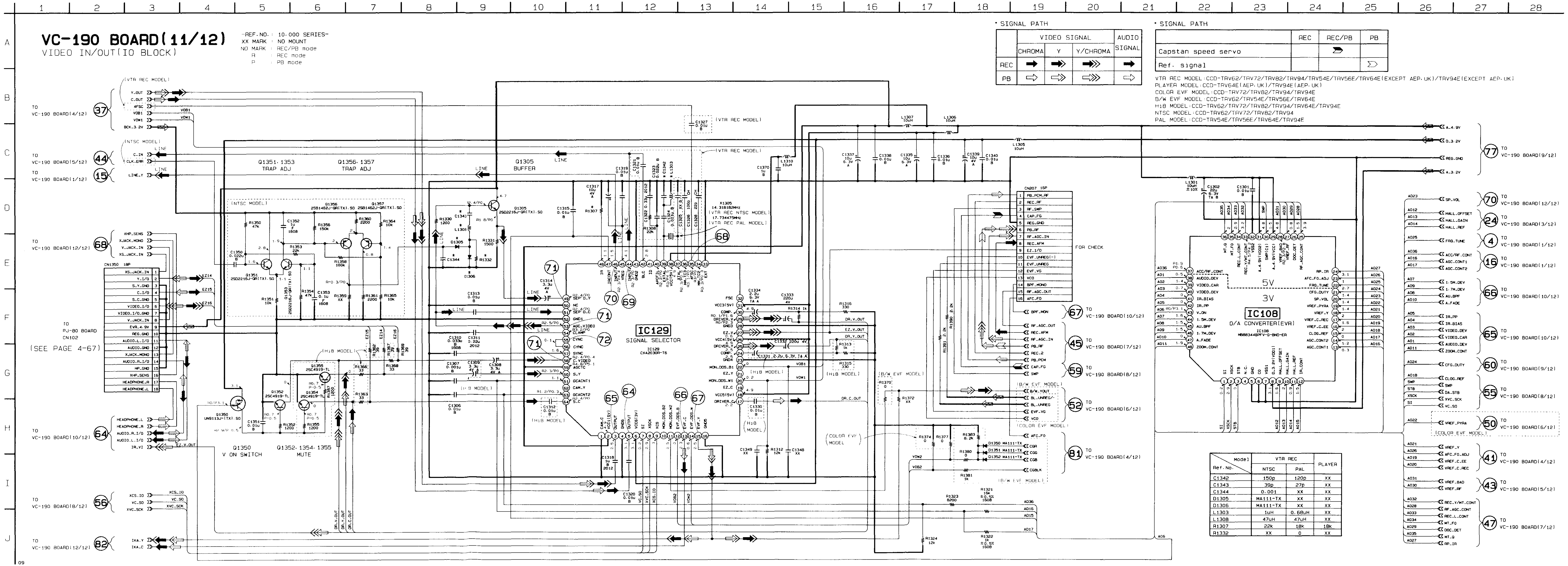
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB			⇨⇨	⇨

- **For schematic diagrams.**
- Refer to page 4–17 for Printed Wiring Board.

VC-190 BOARD(11/12)

VIDEO IN/OUT(IO BLOCK)

–REF.NO. : 10,000 SERIES–
XX MARK : NO MOUNT
NO MARK : REC/PB mode
R : REC mode
P : PB mode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J
(VTR REC MODEL)
Y_OUT
C_OUT
TO VC-190 BOARD(4/12) (37)
(NTSC MODEL)
C_IN
LINE
TO VC-190 BOARD(5/12) (44)
TO VC-190 BOARD(1/12) (15)
LINE_Y
TO VC-190 BOARD(12/12) (68)
CN1350 18P
TO PJ-80 BOARD CN102 (SEE PAGE 4-67)
TO VC-190 BOARD(10/12) (64)
TO VC-190 BOARD(8/12) (56)
TO VC-190 BOARD(12/12) (82)
Q1351-1353 TRAP ADJ
Q1356-1357 TRAP ADJ
Q1305 BUFFER
Q1350 V ON SWITCH
Q1352-1354-1355 MUTE
IC129 SIGNAL SELECTOR
IC129 CXA2030R-T6
IC108 D/A CONVERTER(EVR)
IC108 MB88346BPFV-G-BND-ER
5V
3V
CN207 15P
FOR CHECK
TO VC-190 BOARD(9/12) (77)
TO VC-190 BOARD(12/12) (70)
TO VC-190 BOARD(3/12) (24)
TO VC-190 BOARD(1/12) (4)
TO VC-190 BOARD(1/12) (16)
TO VC-190 BOARD(10/12) (66)
TO VC-190 BOARD(10/12) (65)
TO VC-190 BOARD(9/12) (60)
TO VC-190 BOARD(8/12) (55)
TO VC-190 BOARD(6/12) (50)
TO VC-190 BOARD(4/12) (41)
TO VC-190 BOARD(5/12) (43)
TO VC-190 BOARD(7/12) (47)
TO VC-190 BOARD(10/12) (67)
TO VC-190 BOARD(7/12) (45)
TO VC-190 BOARD(8/12) (59)
TO VC-190 BOARD(6/12) (52)
TO VC-190 BOARD(4/12) (81)
(B/W EVF MODEL)
(COLOR EVF MODEL)
(Hi8 MODEL)
A_4.9V
D_3.2V
REG_GND
A_3.2V

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨

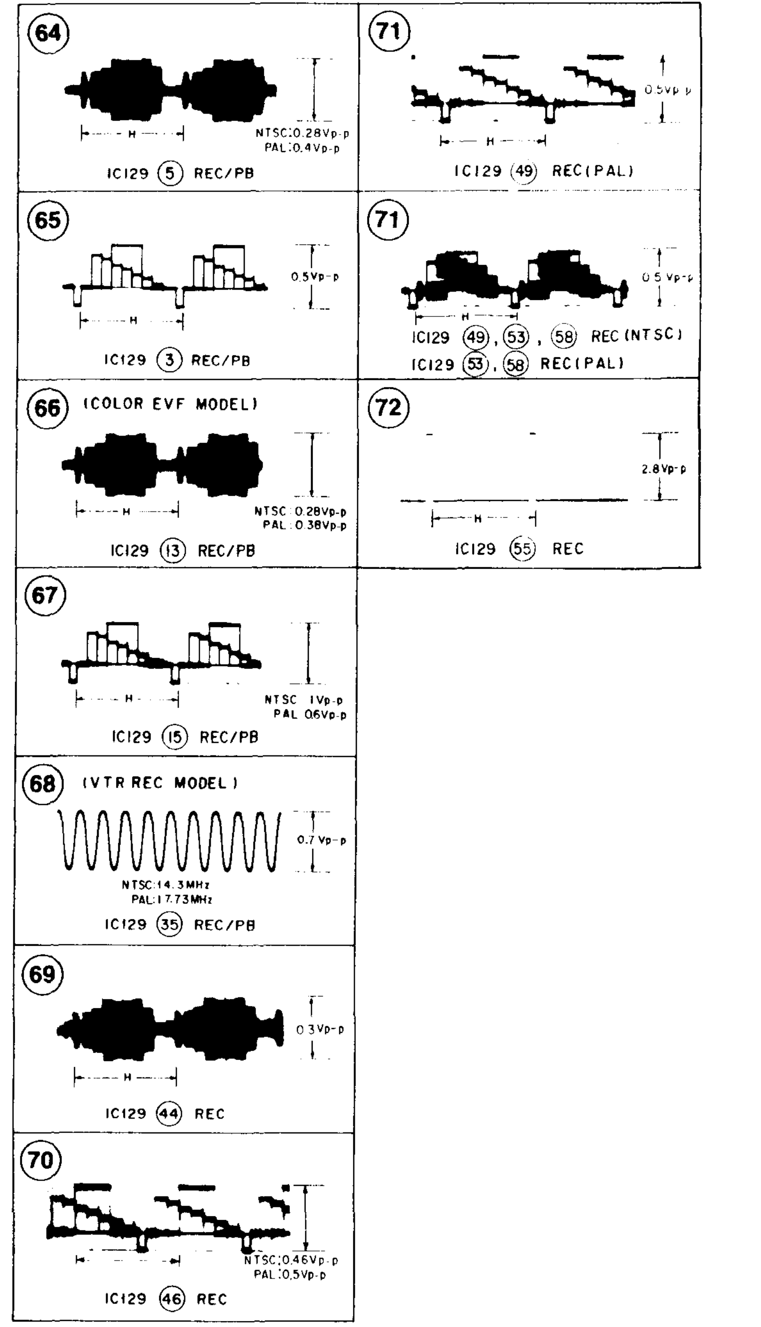
• SIGNAL PATH

	REC	REC/PB	PB
Capstan speed servo		➡	
Ref. signal			⇨

VTR REC MODEL:CCD-TRV62/TRV72/TRV82/TRV94/TRV54E/TRV56E/TRV64E(EXCEPT AEP,UK)/TRV94E(EXCEPT AEP,UK)
PLAYER MODEL:CCD-TRV64E(AEP,UK)/TRV94E(AEP,UK)
COLOR EVF MODEL:CCD-TRV72/TRV82/TRV94/TRV94E
B/W EVF MODEL:CCD-TRV62/TRV54E/TRV56E/TRV64E
Hi8 MODEL:CCD-TRV62/TRV72/TRV82/TRV94/TRV64E/TRV94E
NTSC MODEL:CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL:CCD-TRV54E/TRV56E/TRV64E/TRV94E

Model / Ref. No.	VTR REC		PLAYER
	NTSC	PAL	
C1342	150p	120p	XX
C1343	39p	27p	XX
C1344	0.001	XX	XX
D1305	MA111-TX	XX	XX
D1306	MA111-TX	XX	XX
L1303	1uH	0.68uH	XX
L1308	47uH	47uH	XX
R1307	22k	18k	18k
R1332	XX	0	XX

VC-190 BOARD(IO BLOCK)

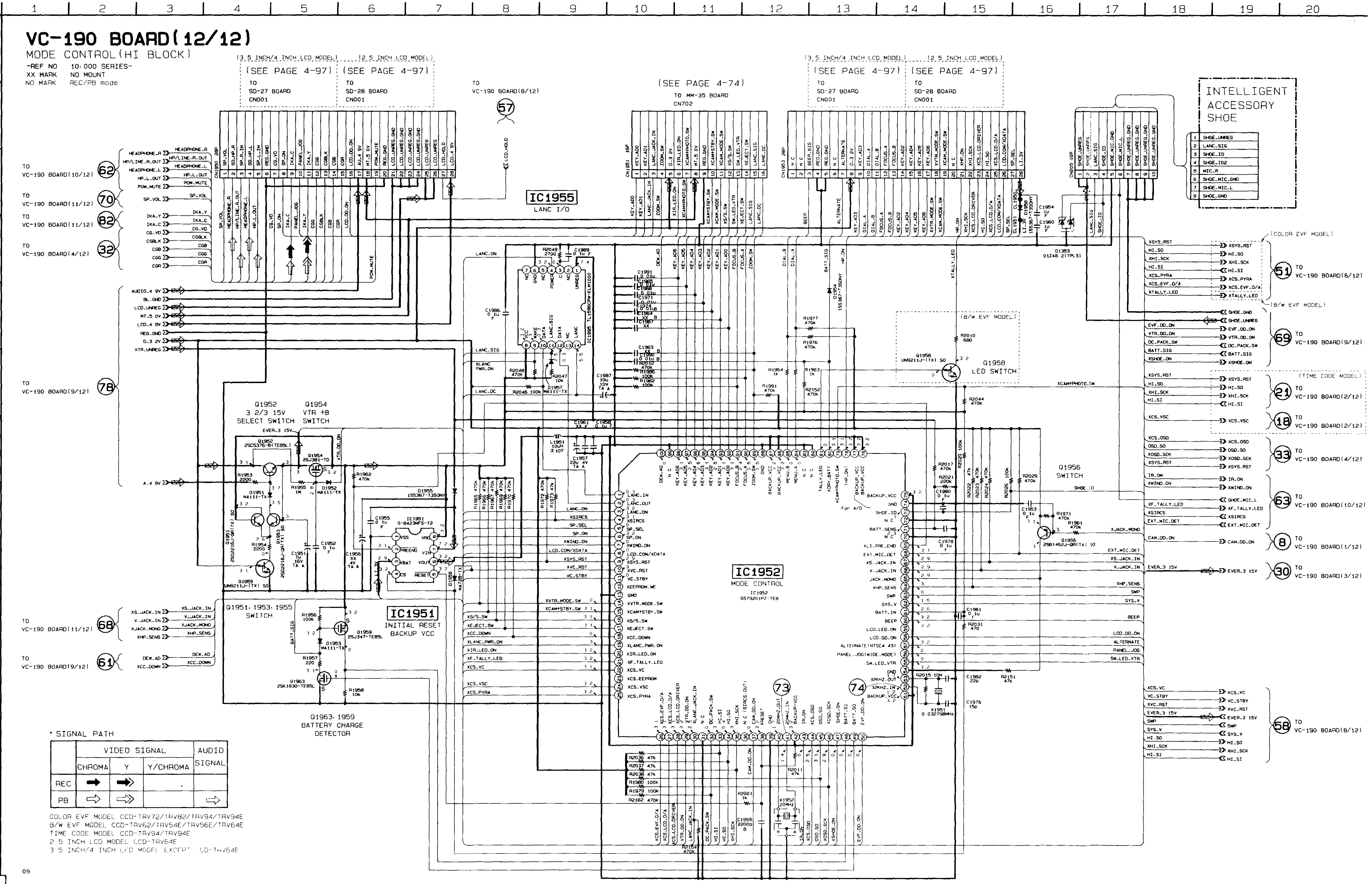


- **For schematic diagrams.**
- Refer to page 4–17 for Printed Wiring Board

VC-190 BOARD(12/12)

MODE CONTROL(HI BLOCK)

-REF NO 10,000 SERIES-
XX MARK NO MOUNT
NO MARK REC/PB mode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M
(3.5 INCH/4 INCH LCD MODEL)
(SEE PAGE 4-97)
TO SD-27 BOARD CN001
(2.5 INCH LCD MODEL)
(SEE PAGE 4-97)
TO SD-28 BOARD CN001
TO VC-190 BOARD(8/12)
57
(SEE PAGE 4-74)
TO MM-35 BOARD CN702
IC1955
LANC I/O
INTELLIGENT ACCESSORY SHOE
TO VC-190 BOARD(10/12)
62
TO VC-190 BOARD(11/12)
70
TO VC-190 BOARD(11/12)
82
TO VC-190 BOARD(4/12)
32
TO VC-190 BOARD(9/12)
78
Q1952
3 2/3 15V SELECT SWITCH
Q1954
VTR +B SWITCH
IC1951
INITIAL RESET BACKUP VCC
Q1951,1953,1955 SWITCH
TO VC-190 BOARD(11/12)
68
TO VC-190 BOARD(9/12)
61
Q1963,1959
BATTERY CHARGE DETECTOR
IC1952
MODE CONTROL
IC1952 S579201PZ-TEB
73
74
Q1958
LED SWITCH
(B/W EVF MODEL)
Q1956
SWITCH
(COLOR EVF MODEL)
TO VC-190 BOARD(6/12)
51
TO VC-190 BOARD(9/12)
69
(TIME CODE MODEL)
TO VC-190 BOARD(2/12)
21
TO VC-190 BOARD(2/12)
18
TO VC-190 BOARD(4/12)
33
TO VC-190 BOARD(10/12)
63
TO VC-190 BOARD(1/12)
8
TO VC-190 BOARD(3/12)
30
TO VC-190 BOARD(8/12)
58

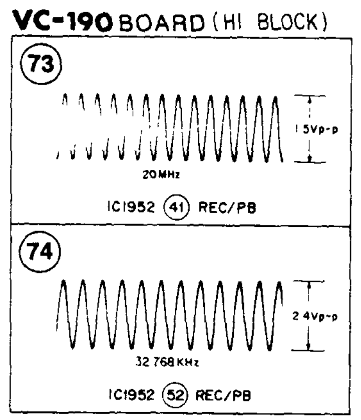
• SIGNAL PATH

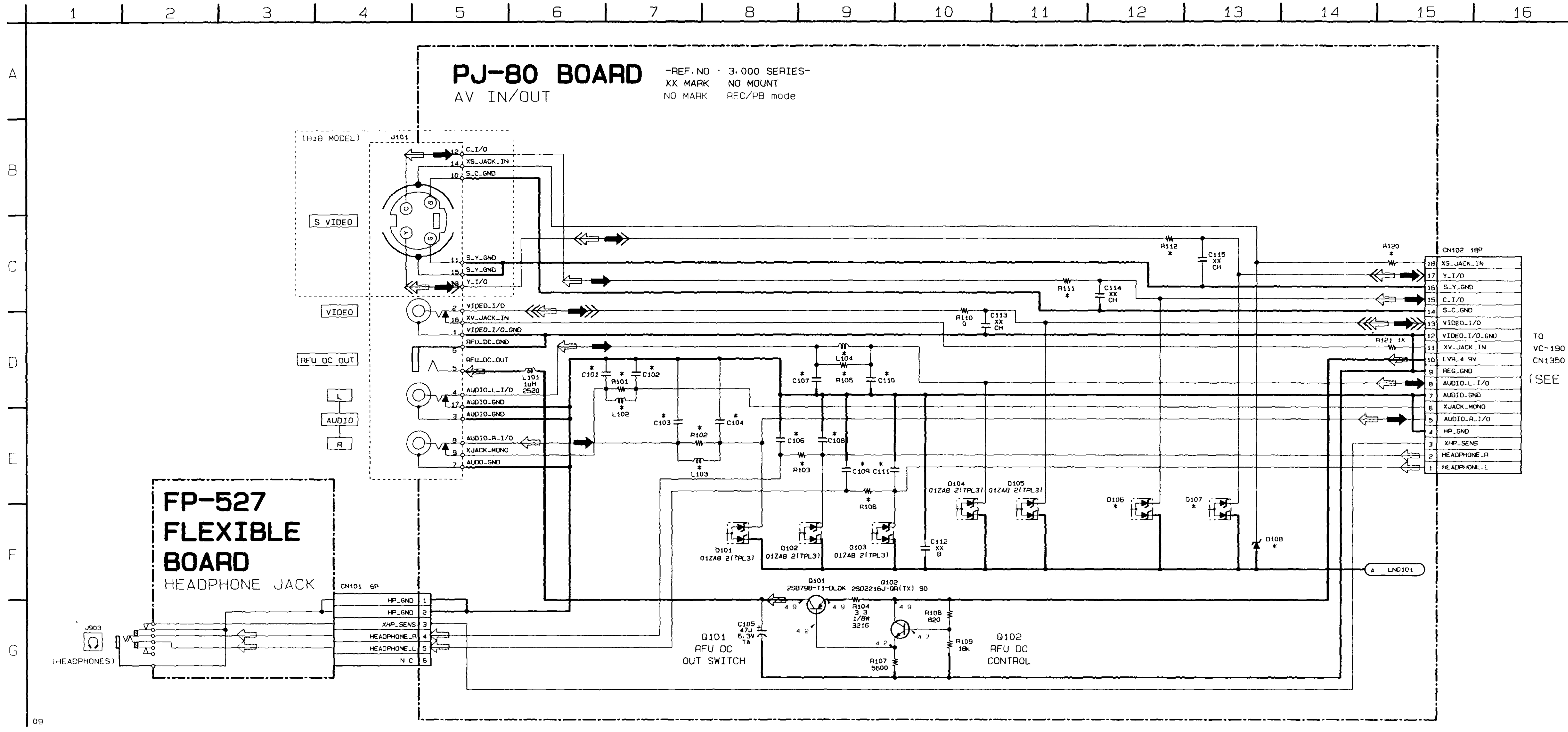
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»		
PB	⇨	⇨»		⇨

COLOR EVF MODEL CCD-TRV72/TRV82/TRV94/TRV94E
B/W EVF MODEL CCD-TRV62/TRV54E/TRV56E/TRV64E
TIME CODE MODEL CCD-TRV94/TRV94E
2.5 INCH LCD MODEL CCD-TRV64E
3.5 INCH/4 INCH LCD MODEL EXCEPT CCD-TRV64E

09

VC-190 BOARD (HI BLOCK)




PJ-80 BOARD
AV IN/OUT
-REF.NO · 3.000 SERIES-
XX MARK NO MOUNT
NO MARK REC/PB mode
(H18 MODEL)
J101
S VIDEO
VIDEO
RFU DC OUT
L
AUDIO
R
C_I/O
XS_JACK_IN
S_C_GND
S_Y_GND
Y_I/O
VIDEO_I/O
XV_JACK_IN
VIDEO_I/O_GND
RFU_DC_GND
RFU_DC_OUT
AUDIO_L_I/O
AUDIO_GND
AUDIO_R_I/O
XJACK_MONO
AUDIO_GND
CN102 18P
XS_JACK_IN
Y_I/O
S_Y_GND
C_I/O
S_C_GND
VIDEO_I/O
VIDEO_I/O_GND
XV_JACK_IN
EVR_4.9V
REG_GND
AUDIO_L_I/O
AUDIO_GND
AUDIO_R_I/O
HP_GND
XHP_SENS
XJACK_MONO
HEADPHONE_R
HEADPHONE_L
FP-527
FLEXIBLE
BOARD
HEADPHONE JACK
CN101 6P
HP_GND
HP_GND
XHP_SENS
HEADPHONE_R
HEADPHONE_L
N C
J903
(HEADPHONES)
Q101
RFU DC
OUT SWITCH
Q102
RFU DC
CONTROL
D101 01ZA8 2(TPL3)
D102 01ZA8 2(TPL3)
D103 01ZA8 2(TPL3)
D104 01ZA8 2(TPL3)
D105 01ZA8 2(TPL3)
D106
D107
D108
LND101
09

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡》	➡》》	➡
PB	⇨	⇨》	⇨》》	⇨

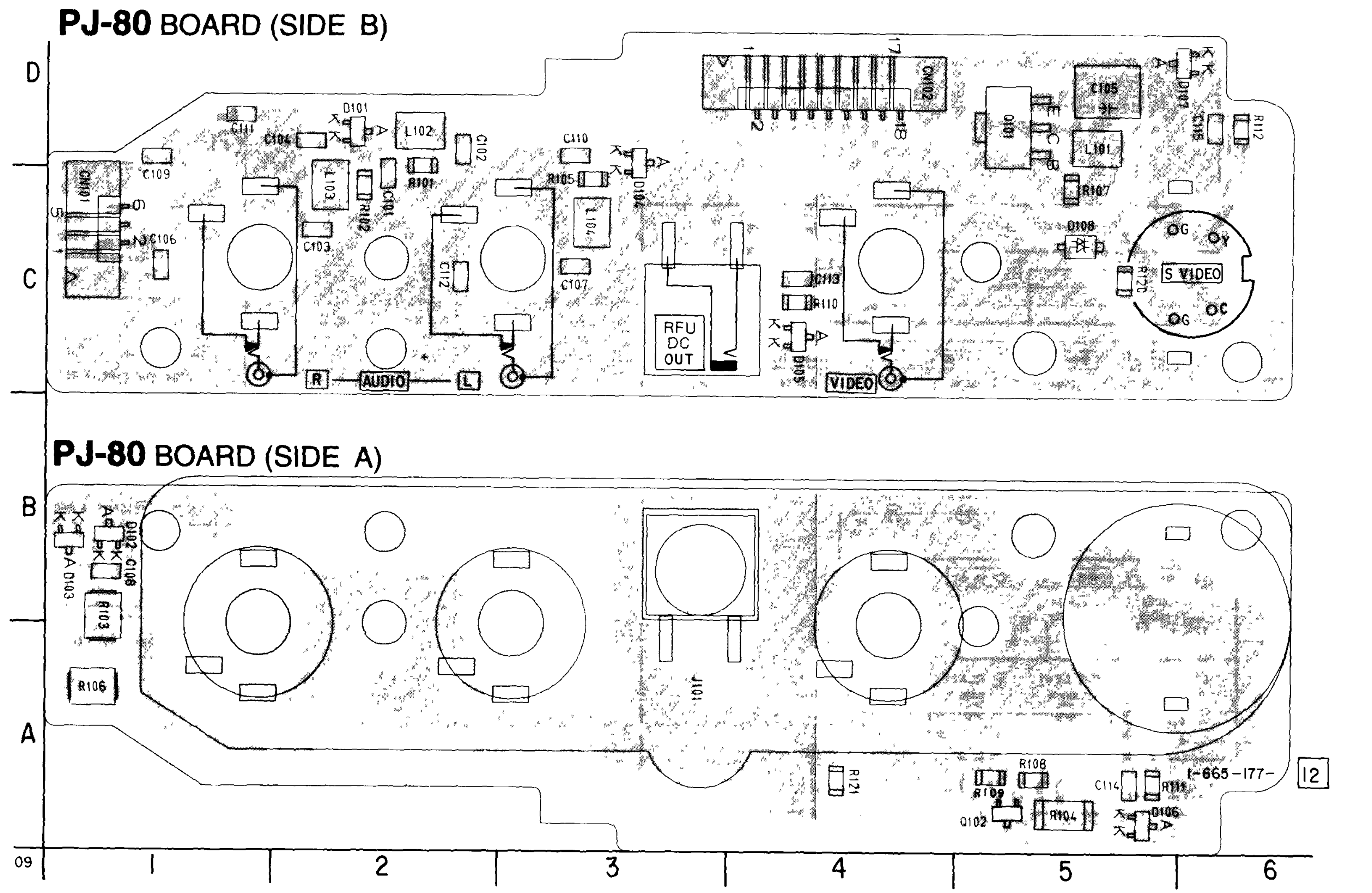
H18 MODEL CCD-TRV62/TRV72/TRV82/TRV94/TRV64E/TRV94E
NTSC DIGITAL 30x MODEL CCD-TRV62/TRV72/TRV82
NTSC DIGITAL 180x MODEL CCD-TRV94
PAL DIGITAL 30x MODEL CCD-TRV64E(AEP, UK)/TRV94E(AEP, UK)
PAL DIGITAL 180x MODEL CCD-TRV64E(EXCEPT AEP, UK)/TRV94E(EXCEPT AEP, UK)
PAL STANDERD 8 MODEL CCD-TRV54E/TRV56E

TO
VC-190 BOARD(11/12)
CN1350
(SEE PAGE 4-57)

Model / Ref No	NTSC		PAL		
	DIGITAL 30x	DIGITAL 180x	STANDERD 8	DIGITAL 30x	DIGITAL 180x
C101	XX	XX	XX	0 001	XX
C102	XX	XX	XX	0 001	XX
C103	XX	XX	XX	0 001	XX
C104	XX	XX	XX	0 001	XX
C106	0 001	XX	0 001	0 001	XX
C107	XX	XX	XX	0 001	XX
C108	0 001	XX	0 001	0 001	XX
C109	0 001	XX	0 001	0 001	XX
C110	XX	XX	XX	0 001	XX
C111	0 001	XX	0 001	0 001	XX
D106	01ZA8 2	01ZA8 2	XX	01ZA8 2	01ZA8 2
D107	01ZA8 2	01ZA8 2	XX	01ZA8 2	01ZA8 2
D108	MA8082	MA8082	XX	MA8082	MA8082
L102	XX	XX	XX	100uH	XX
L103	XX	XX	XX	100uH	XX
L104	XX	XX	XX	100uH	XX
R101	0	0	0	XX	0
R102	0	0	0	XX	0
R103	100uH	0	100uH	100uH	0
R105	0	0	0	XX	0
R106	100uH	0	100uH	100uH	0
R111	0	0	XX	0	0
R112	0	0	XX	0	0
R120	1k	1k	XX	1k	1k

PJ-80 (AV IN/OUT) PRINTED WIRING BOARD

– Ref No PJ-80 BOARD· 3,000 series –


PJ-80 BOARD (SIDE B)

PJ-80 BOARD (SIDE A)
D
C
B
A
09
1
2
3
4
5
6
S VIDEO
RFU DC OUT
R
AUDIO
L
VIDEO
J101
1-665-177-
12

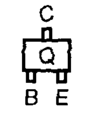
PJ-80 BOARD

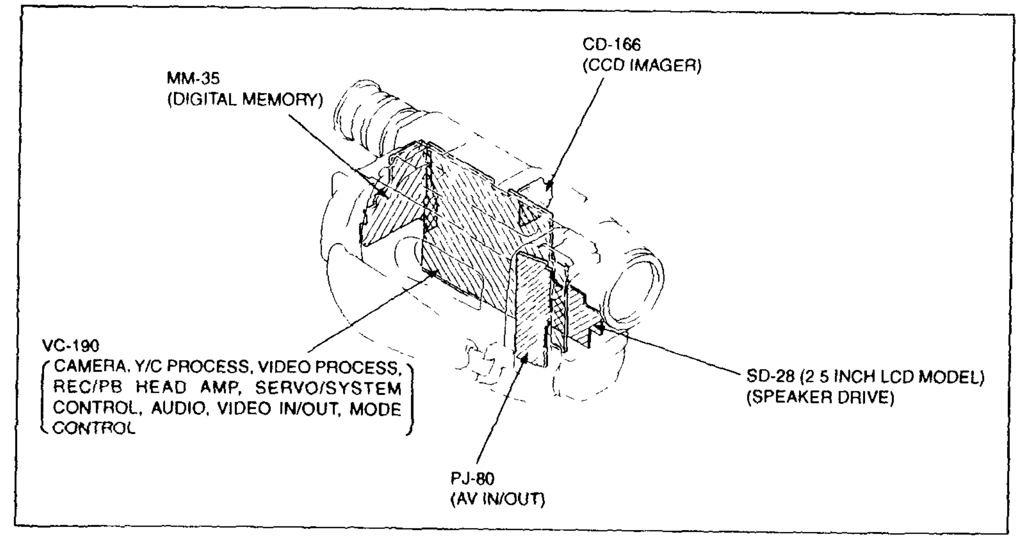
C101	C-2
C102	D-2
C103	C-2
C104	D-2
C105	D-5
C106	C-1
C107	C-3
C109	D-1
C110	D-3
C111	D-1
C112	C-2
C113	C-4
C114	A-5
C115	D-6
CN101	C-1
CN102	D-4
D101	D-2
D104	D-3
D105	C-4
D106	A-5
D107	D-6
D108	C-5
J101	A-1
L101	D-5
L102	D-2
L103	C-2
L104	C-3
Q101	D-5
Q102	A-5
R101	D-2
R102	C-2
R104	A-5
R105	C-3
R106	A-1
R107	C-5
R108	A-5
R109	A-5
R110	C-4
R111	A-5
R112	D-6
R120	C-5
R121	A-4

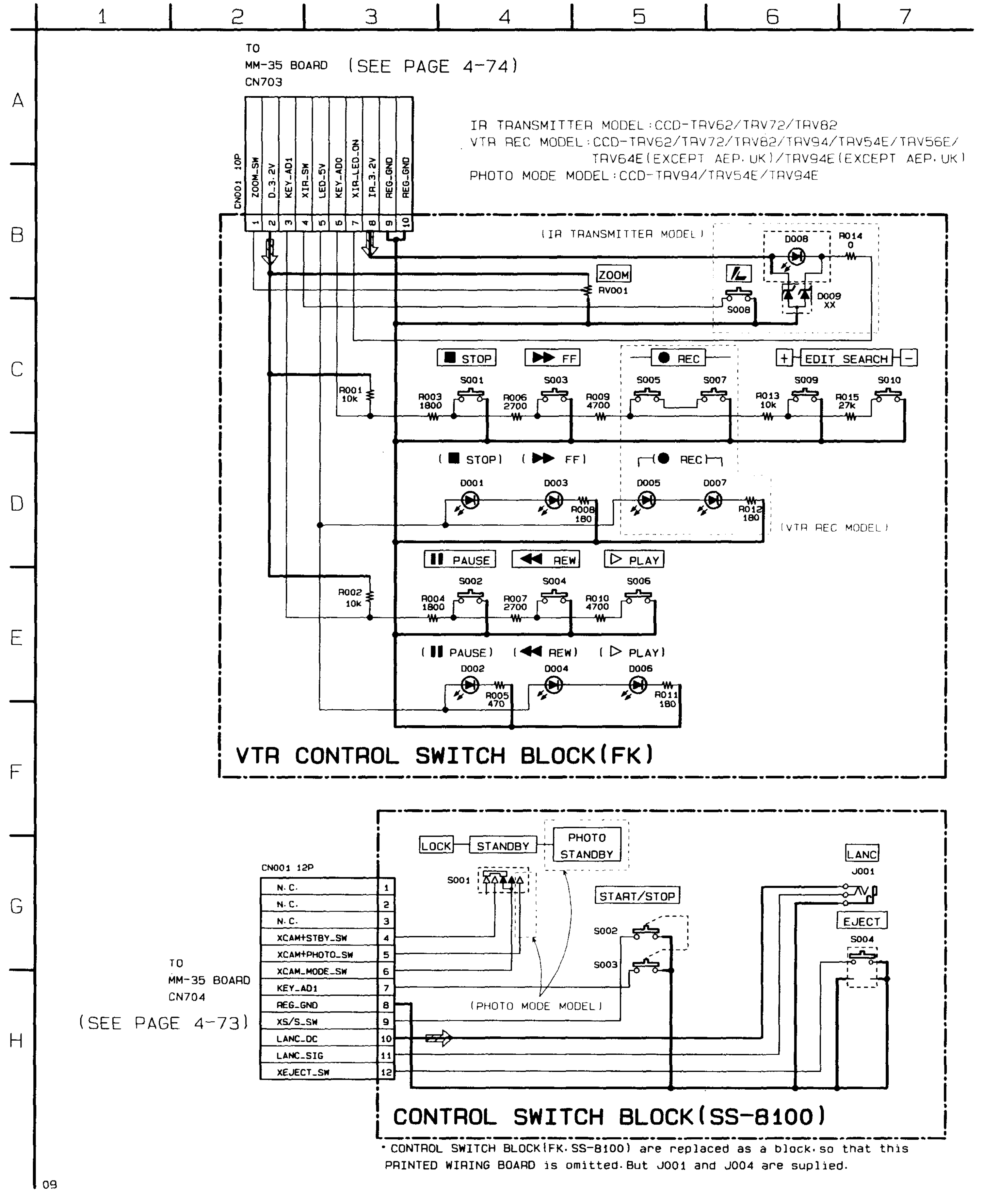
• **For Printed Wiring Boards.**

There are few cases that the part isn't mounted in this model is printed on this diagram

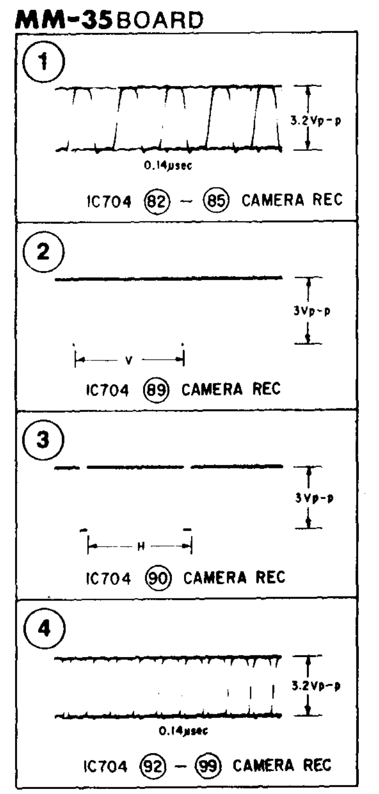
• Chip transistor

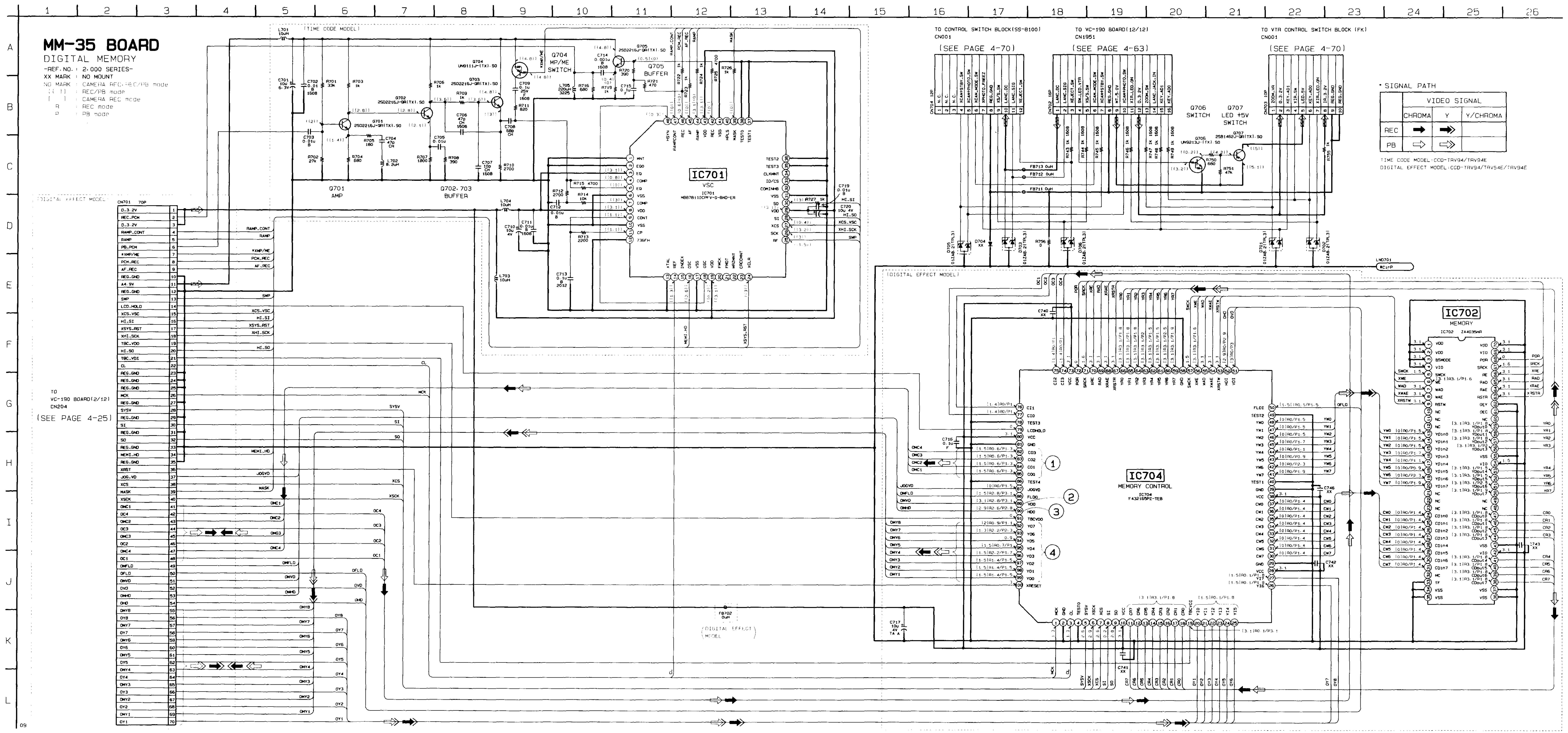



MM-35
(DIGITAL MEMORY)
CD-166
(CCD IMAGER)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
SD-28 (2 5 INCH LCD MODEL)
(SPEAKER DRIVE)
PJ-80
(AV IN/OUT)


TO
MM-35 BOARD (SEE PAGE 4-74)
CN703
IR TRANSMITTER MODEL:CCD-TRV62/TRV72/TRV82
VTR REC MODEL:CCD-TRV62/TRV72/TRV82/TRV94/TRV54E/TRV56E/
TRV64E(EXCEPT AEP, UK)/TRV94E(EXCEPT AEP, UK)
PHOTO MODE MODEL:CCD-TRV94/TRV54E/TRV94E
CN001 10P
ZOOM_SW
D_3.2V
KEY_AD1
XIR_SW
LED_5V
KEY_AD0
XIR_LED_ON
IR_3.2V
REG_GND
(IR TRANSMITTER MODEL)
ZOOM
RV001
S008
D008
D009 XX
R014 0
STOP
FF
REC
EDIT SEARCH
PAUSE
REW
PLAY
(VTR REC MODEL)
VTR CONTROL SWITCH BLOCK(FK)
TO
MM-35 BOARD
CN704
(SEE PAGE 4-73)
CN001 12P
N.C.
XCAM+STBY_SW
XCAM+PHOTO_SW
XCAM_MODE_SW
KEY_AD1
REG_GND
XS/S_SW
LANC_DC
LANC_SIG
XEJECT_SW
LOCK
STANDBY
PHOTO STANDBY
START/STOP
LANC
J001
EJECT
S004
(PHOTO MODE MODEL)
CONTROL SWITCH BLOCK(SS-8100)

• CONTROL SWITCH BLOCK(FK, SS-8100) are replaced as a block, so that this PRINTED WIRING BOARD is omitted. But J001 and J004 are suplied.




MM-35 BOARD
DIGITAL MEMORY
-REF.NO.: 2,000 SERIES-
XX MARK : NO MOUNT
NO MARK : CAMERA REC, REC/PB mode
(( )) : REC/PB mode
[ ] : CAMERA REC mode
R : REC mode
P : PB mode
(TIME CODE MODEL)
Q701 AMP
Q702-703 BUFFER
Q704 MP/WE SWITCH
Q705 BUFFER
IC701 VSC
(DIGITAL EFFECT MODEL)
CN701 70P
TO
VC-190 BOARD(12/12)
CN204
(SEE PAGE 4-25)
IC704 MEMORY CONTROL
IC702 MEMORY
TO CONTROL SWITCH BLOCK(SS-8100)
CN001
(SEE PAGE 4-70)
TO VC-190 BOARD(12/12)
CN1951
(SEE PAGE 4-63)
TO VTR CONTROL SWITCH BLOCK (FK)
CN001
(SEE PAGE 4-70)
Q706 SWITCH
Q707 LED +5V SWITCH

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	
PB	⇨	⇨»	

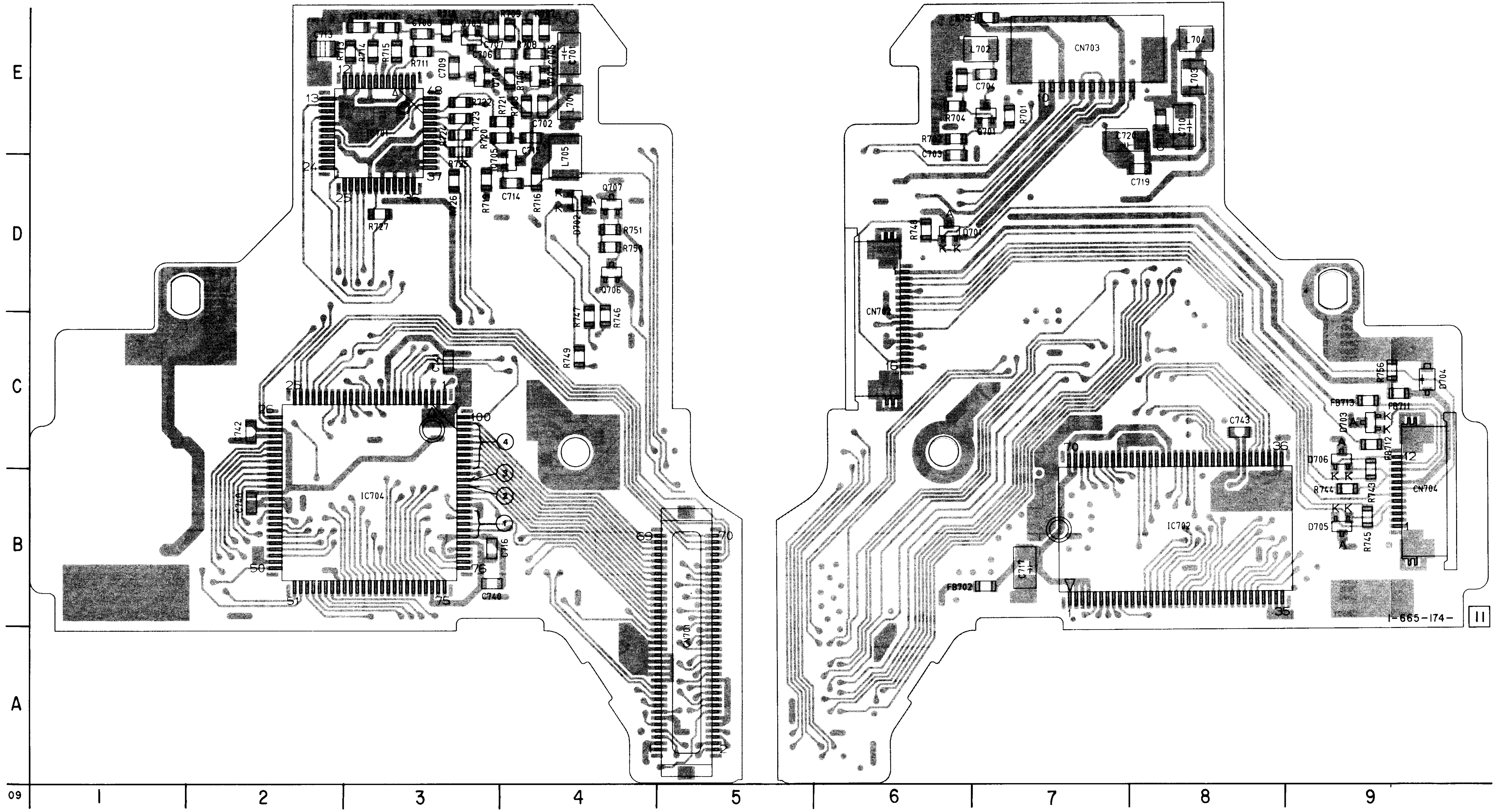
TIME CODE MODEL:CCD-TRV94/TRV94E
DIGITAL EFFECT MODEL:CCD-TRV94/TRV54E/TRV94E

MM-35 (DIGITAL MEMORY) PRINTED WIRING BOARD

– Ref No. MM-35 BOARD: 2,000 series –

MM-35 BOARD (SIDE B)

MM-35 BOARD (SIDE A)


E
D
C
B
A
09
1
2
3
4
5
6
7
8
9
IC701
IC704
IC702
CN701
CN702
CN703
CN704
L702
L704
L705
C702
C704
C714
C719
C740
C742
C743
C746
Q701
Q707
Q706
D706
D705
FB702
FB711
FB713
R727
R749
R751
1-665-174-
11

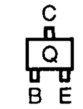
MM-35 BOARD

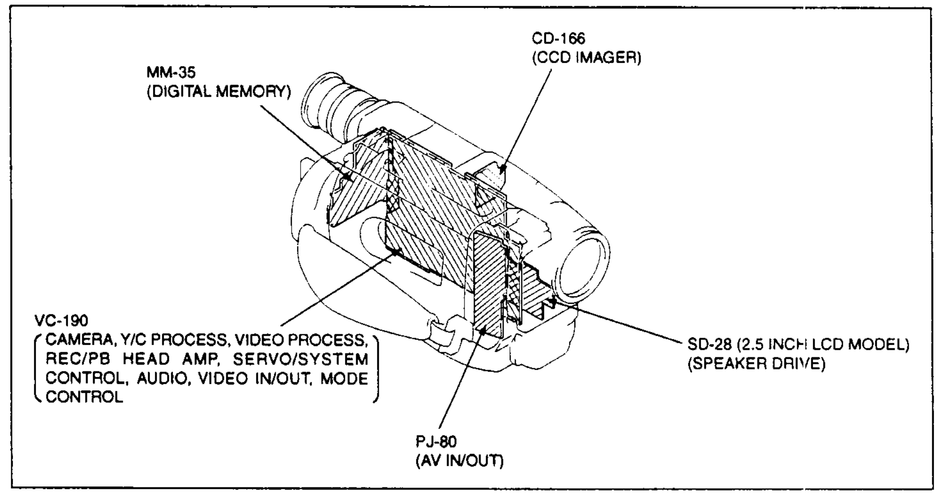
C701	E-4
C702	E-4
C703	D-6
C704	E-7
C705	E-4
C706	E-4
C707	E-3
C708	E-3
C709	E-3
C710	E-8
C711	E-8
C712	E-3
C713	E-2
C714	D-4
C715	E-4
C716	B-2
C717	B-7
C719	D-8
C720	E-8
C740	B-2
C741	C-3
C742	C-2
C743	C-8
C746	B-2
CN701	A-5
CN702	D-6
CN703	E-7
CN704	B-9
D701	D-6
D702	D-4
D703	C-9
D704	C-9
D705	B-9
D706	C-9
FB702	B-7
FB711	C-9
FB712	C-9
FB713	C-9
IC701	E-3
IC702	B-7
IC704	B-2
L701	E-4
L702	E-7
L703	E-8
L704	E-8
L705	D-4
Q701	E-7
Q702	E-4
Q703	E-3
Q704	E-3
Q705	D-4
Q706	D-4
Q707	D-4
R701	E-7
R702	E-6
R703	E-4
R704	E-6
R705	E-6
R706	E-4
R707	E-4
R708	E-4
R709	E-4
R710	E-3
R711	E-3
R712	E-3
R713	E-3
R714	E-3
R715	E-3
R716	D-4
R719	D-3
R720	E-4
R721	E-4
R722	E-3
R723	E-3
R724	E-3
R725	E-3
R726	D-3
R727	D-3
R743	B-9
R744	B-9
R745	B-9
R746	C-4
R747	C-4
R748	D-6
R749	C-4
R750	D-4
R751	D-4
R755	E-7
R756	C-9

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor




MM-35
(DIGITAL MEMORY)
CD-166
(CCD IMAGER)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
SD-28 (2.5 INCH LCD MODEL)
(SPEAKER DRIVE)
PJ-80
(AV IN/OUT)

MI-27/28 BOARD

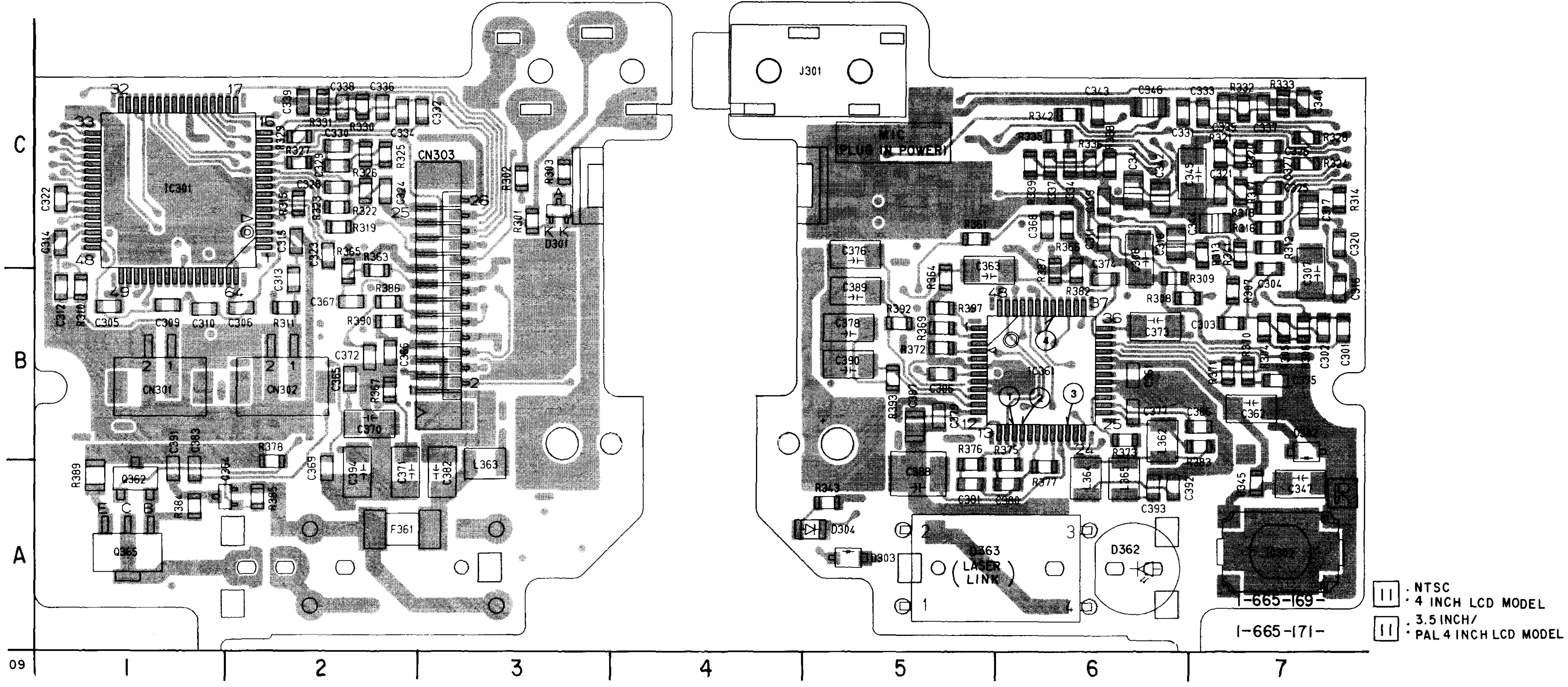
C301	B-7
C302	B-7
C303	B-7
C304	B-7
C305	B-1
C306	B-2
C307	B-7
C308	C-6
C309	B-1
C310	B-1
C311	C-6
C312	B-1
C313	B-2
C314	C-1
C315	C-2
C316	B-7
C317	C-7
C318	C-6
C319	C-6
C320	C-7
C321	C-7
C322	C-1
C323	C-2
C324	C-2
C325	C-7
C326	C-7
C327	C-7
C328	C-2
C329	C-2
C330	C-2
C331	C-6
C332	C-3
C333	C-7
C334	C-2
C335	C-7
C336	C-2
C337	C-7
C338	C-2
C339	C-2
C340	C-7
C341	C-6
C342	C-6
C343	C-6
C344	C-7
C345	C-7
C346	C-6
C347	A-7
C361	B-6
C362	B-7
C363	B-5
C365	B-2
C366	B-2
C367	B-2
C368	C-6
C369	A-2
C370	A-2
C371	A-2
C372	B-2
C373	B-6
C374	B-6
C375	B-7
C376	C-5
C377	B-6
C378	B-5
C379	B-5
C380	A-6
C381	A-5
C382	A-2
C383	A-1
C385	B-5
C386	B-7
C387	B-5
C388	A-5
C389	B-5
C390	B-5
C391	A-1
C392	A-6
C393	A-6
C394	A-2
C395	A-1
C396	A-2
CN301	B-1
CN302	B-2
CN303	C-3
D301	C-3
D302	B-7
D303	A-5
D304	A-5
D362	A-6
D363	A-5
F361	A-3
IC301	C-1
IC302	A-7
IC361	B-6
J301	C-4
L362	B-6
L363	A-3
L364	A-6
L365	A-6
Q362	A-1
Q364	A-2
Q365	A-1
R301	C-3
R302	C-3
R303	C-3
R304	B-7
R305	B-7
R306	B-7
R307	B-7
R308	B-6
R309	B-6
R310	B-1
R311	B-2
R312	C-7
R313	C-7
R314	C-7
R315	C-2
R316	C-7
R317	C-7
R318	C-7
R319	C-2
R320	C-7
R321	C-7
R322	C-2
R323	C-2
R324	C-7
R325	C-2
R326	C-2
R327	C-2
R328	C-7
R329	C-2
R330	C-2
R331	C-2
R332	C-7
R333	C-7
R334	C-6
R335	C-6
R336	C-6
R337	C-6
R338	C-6
R339	C-6
R341	C-7
R342	C-6
R343	A-3
R345	A-7
R361	C-5
R363	B-2
R364	B-5
R365	B-2
R366	C-6
R367	B-2
R369	B-5
R370	B-7
R371	B-7
R372	B-5
R373	B-6
R375	A-6
R376	A-5
R377	A-6
R378	B-2
R382	B-6
R383	B-7
R384	A-1
R385	A-2
R386	B-2
R387	B-6
R389	A-1
R390	B-2
R392	B-5
R393	B-5
R397	B-5
R398	A-1
R399	B-3

MI-27 (STEREO MIC, LASER LINK (NTSC 4 INCH LCD MODEL)), MI-28 (STEREO MIC, LASER LINK(3.5 INCH/PAL 4 INCH LCD MODEL)) PRINTED WIRING BOARDS

– Ref No. MI-27 BOARD: 4,000 series, MI-28 BOARD: 8,000 series –

MI-27 BOARD (SIDE B) (NTSC 4 INCH LCD MODEL)
MI-28 BOARD (SIDE B) (3.5 INCH/PAL 4 INCH MODEL)

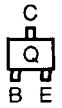
MI-27 BOARD (SIDE A) (NTSC 4 INCH LCD MODEL)
MI-28 BOARD (SIDE A) (3.5 INCH/PAL 4 INCH MODEL)

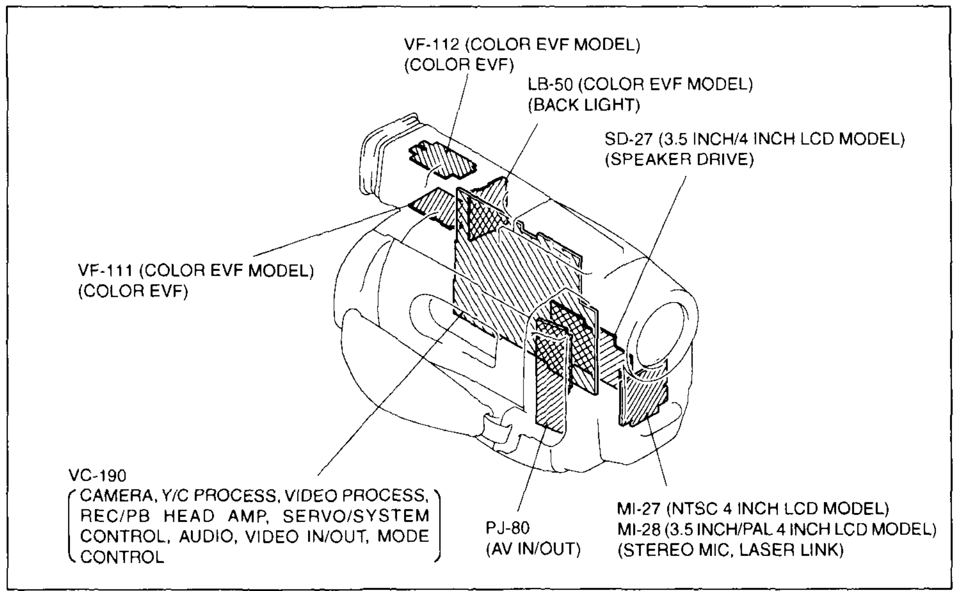

C
B
A
09
1
2
3
4
5
6
7
IC301
CN301
CN302
CN303
D301
Q362
Q365
F361
L363
J301
MIC
(PLUG IN POWER)
IC361
D303
D304
D363
(LASER LINK)
D362
1-665-169-
1-665-171-
: NTSC
4 INCH LCD MODEL
: 3.5 INCH/
PAL 4 INCH LCD MODEL

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor



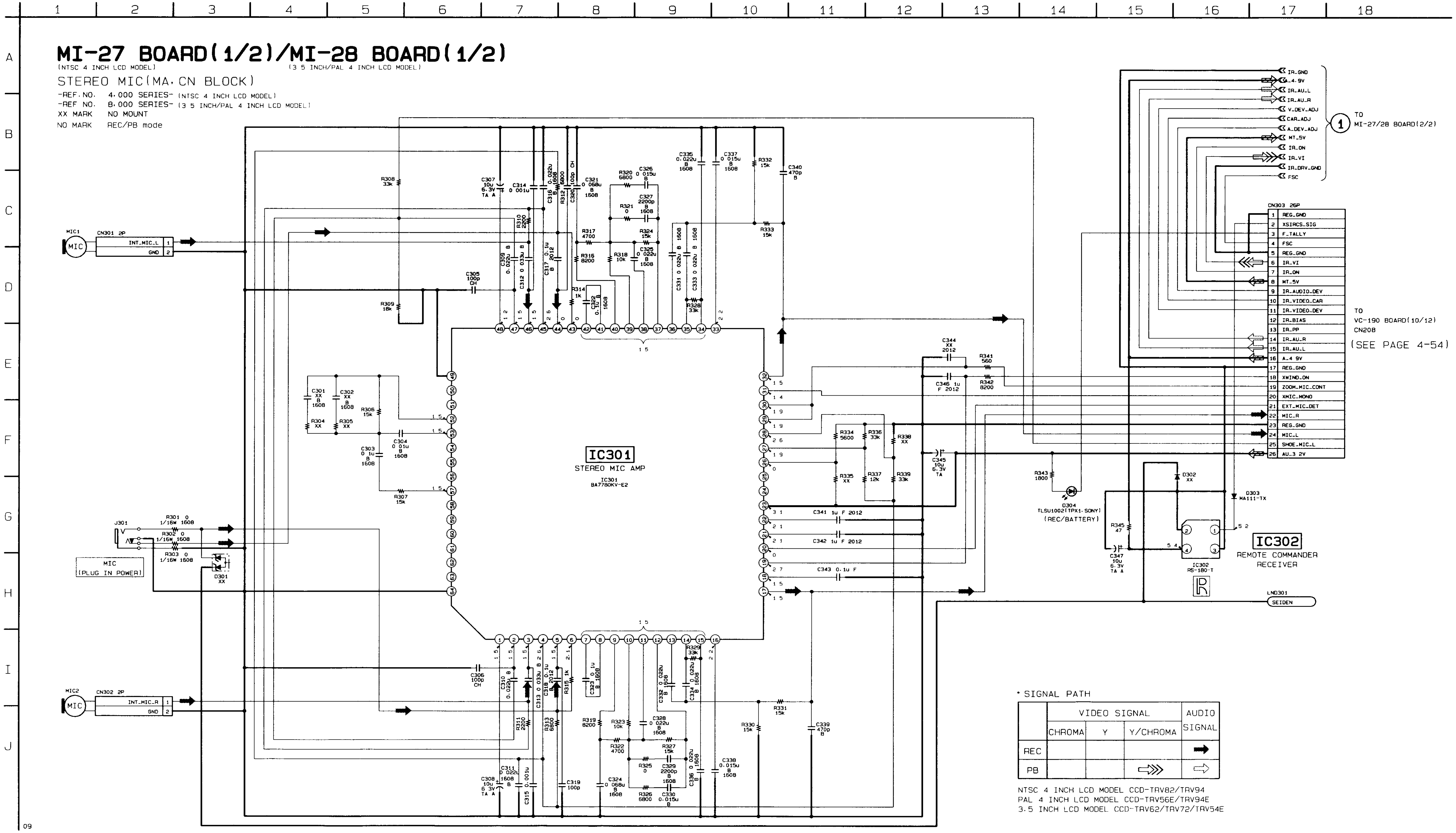

VF-112 (COLOR EVF MODEL)
(COLOR EVF)
LB-50 (COLOR EVF MODEL)
(BACK LIGHT)
SD-27 (3.5 INCH/4 INCH LCD MODEL)
(SPEAKER DRIVE)
VF-111 (COLOR EVF MODEL)
(COLOR EVF)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
PJ-80
(AV IN/OUT)
MI-27 (NTSC 4 INCH LCD MODEL)
MI-28 (3.5 INCH/PAL 4 INCH LCD MODEL)
(STEREO MIC, LASER LINK)

MI-27 BOARD(1/2)/MI-28 BOARD(1/2)

(NTSC 4 INCH LCD MODEL) (3.5 INCH/PAL 4 INCH LCD MODEL)

STEREO MIC(MA,CN BLOCK)

-REF.NO. 4,000 SERIES- (NTSC 4 INCH LCD MODEL)
-REF.NO. 8,000 SERIES- (3.5 INCH/PAL 4 INCH LCD MODEL)
XX MARK NO MOUNT
NO MARK REC/PB mode


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J
MIC1
MIC
CN301 2P
INT_MIC_L
GND
MIC2
CN302 2P
INT_MIC_R
J301
MIC (PLUG IN POWER)
D301 XX
IC301
STEREO MIC AMP
IC301 BA7780KV-E2
IC302
REMOTE COMMANDER RECEIVER
IC302 RS-180-T
D302 XX
D303 MA111-TX
D304 TLSU1002(TPX1-SONY) (REC/BATTERY)
LND301
SEIDEN
IR_GND
A_4.9V
IR_AU_L
IR_AU_R
V_DEV_ADJ
CAR_ADJ
A_DEV_ADJ
MT_5V
IR_ON
IR_VI
IR_DRV_GND
FSC
1
TO MI-27/28 BOARD(2/2)
CN303 26P
1 REG_GND
2 XSIRCS_SIG
3 F_TALLY
4 FSC
5 REG_GND
6 IR_VI
7 IR_ON
8 MT_5V
9 IR_AUDIO_DEV
10 IR_VIDEO_CAR
11 IR_VIDEO_DEV
12 IR_BIAS
13 IR_PP
14 IR_AU_R
15 IR_AU_L
16 A_4.9V
17 REG_GND
18 XWIND_ON
19 ZOOM_MIC_CONT
20 XMIC_MONO
21 EXT_MIC_DET
22 MIC_R
23 REG_GND
24 MIC_L
25 SHOE_MIC_L
26 AU_3.2V
TO VC-190 BOARD(10/12) CN208
(SEE PAGE 4-54)
09

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB			⇨≫	⇨

NTSC 4 INCH LCD MODEL CCD-TRV82/TRV94
PAL 4 INCH LCD MODEL CCD-TRV56E/TRV94E
3.5 INCH LCD MODEL CCD-TRV62/TRV72/TRV54E

STEREO MIC
MI-27 (NTSC 4 INCH LCD MODEL)/MI-28 (3.5 INCH/PAL 4 INCH LCD MODEL)

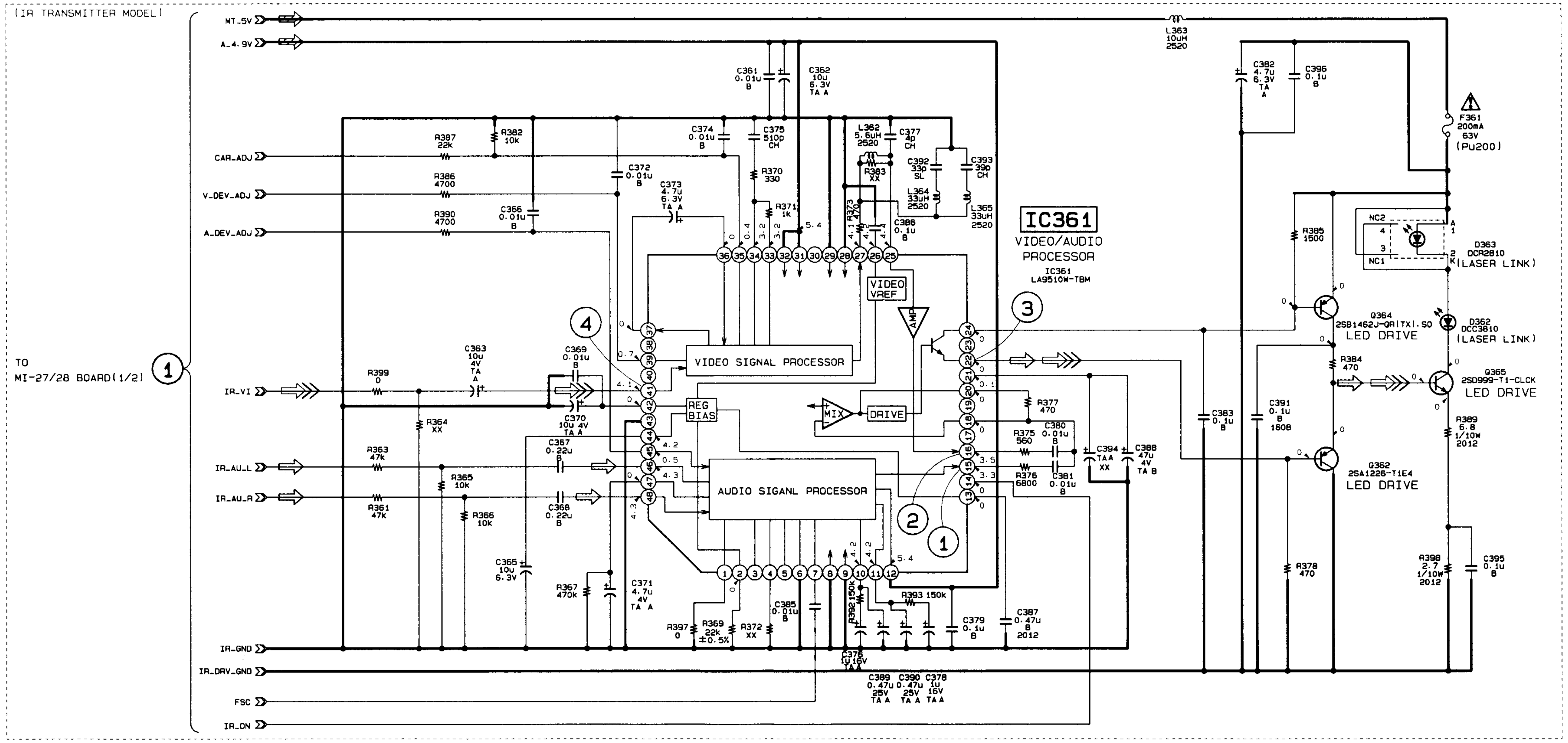
- **For schematic diagrams.**
- Refer to page 4-79 for Printed Wiring Board.

MI-27 BOARD (2/2)/MI-28 BOARD (2/2)

(NTSC 4 INCH LCD MODEL) (3.5 INCH/PAL 4 INCH LCD MODEL)

LASER LINK (IR BLOCK)

-REF. NO. : 4,000 SERIES- (NTSC 4 INCH LCD MODEL)
-REF. NO. : 8,000 SERIES- (3.5 INCH/PAL 4 INCH LCD MODEL)
XX MARK : NO MOUNT
NO MARK : REC/PB mode


(IR TRANSMITTER MODEL)
TO MI-27/28 BOARD (1/2) ①
MT_5V
A_4.9V
CAR_ADJ
V_DEV_ADJ
A_DEV_ADJ
IR_VI
IR_AU_L
IR_AU_R
IR_GND
IR_DRV_GND
FSC
IR_ON
IC361
VIDEO/AUDIO PROCESSOR
IC361 LA9510W-TBM
VIDEO SIGNAL PROCESSOR
AUDIO SIGANL PROCESSOR
REG BIAS
VIDEO VREF
AMP
MIX
DRIVE
L363 10uH 2520
F361 200mA 63V (Pu200)
D363 DCR2810 (LASER LINK)
NC2
NC1
Q364 2SB1462J-QR(TX).SO LED DRIVE
D362 DCC3810 (LASER LINK)
Q365 2SD999-T1-CLCK LED DRIVE
Q362 2SA1226-T1E4 LED DRIVE
R385 1500
R384 470
R389 6.8 1/10W 2012
R378 470
R398 2.7 1/10W 2012
C395 0.1u B
C382 4.7u 6.3V TA A
C396 0.1u B
C383 0.1u B
C391 0.1u B 1608
C361 0.01u B
C362 10u 6.3V TA A
R387 22k
R382 10k
R386 4700
R390 4700
C366 0.01u B
C372 0.01u B
C373 4.7u 6.3V TA A
C374 0.01u B
C375 510p CH
R370 330
R371 1k
L362 5.6uH 2520
C377 4p CH
C392 33p SL
R383 XX
L364 33uH 2520
C393 39p CH
L365 33uH 2520
C386 0.1u B
C363 10u 4V TA A
C369 0.01u B
R399 0
R364 XX
C370 10u 4V TA A
C367 0.22u B
R363 47k
R365 10k
R361 47k
R366 10k
C368 0.22u B
C365 10u 6.3V
R367 470k
C371 4.7u 4V TA A
R397 0
R369 22k ±0.5%
R372 XX
C385 0.01u B
R392 150k
R393 150k
C379 0.1u B
C387 0.47u B 2012
C376 1u 16V TA A
C389 0.47u 25V TA A
C390 0.47u 25V TA A
C378 1u 16V TA A
R377 470
R375 560
C380 0.01u B
R376 6800
C381 0.01u B
C394 TA A XX
C388 47u 4V TA B
② ① ③ ④

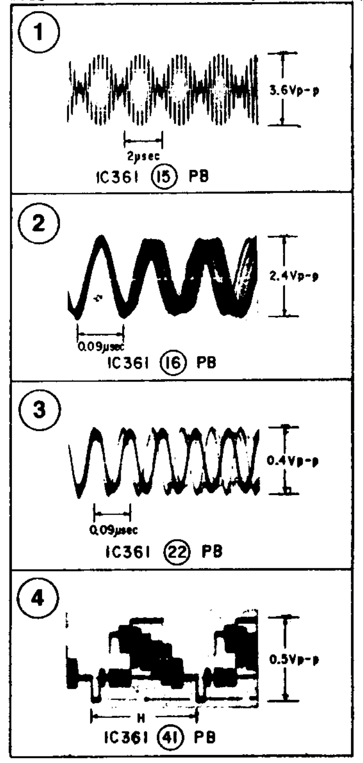
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB			⇨≫	⇨

NTSC 4 INCH LCD MODEL : CCD-TRV82/TRV94
PAL 4 INCH LCD MODEL : CCD-TRV56E/TRV94E
3.5 INCH LCD MODEL : CCD-TRV62/TRV72/TRV54E
IR TRANSMITTER MODEL : CCD-TRV62/TRV72/TRV82

09

MI-27/28 BOARD (IR BLOCK)

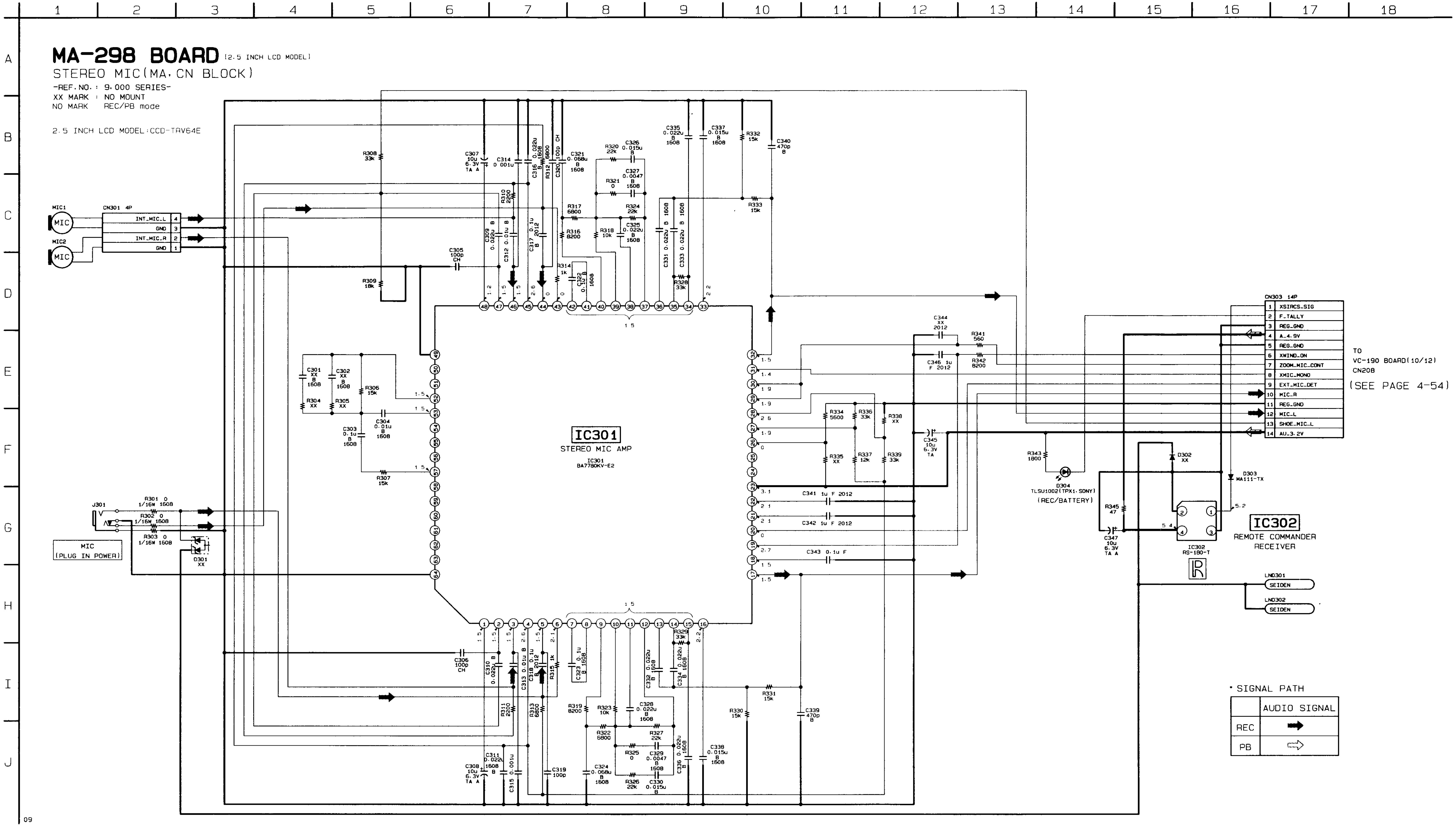


MA-298 BOARD (2.5 INCH LCD MODEL)

STEREO MIC(MA,CN BLOCK)

-REF.NO.: 9,000 SERIES-
XX MARK : NO MOUNT
NO MARK REC/PB mode

2.5 INCH LCD MODEL:CCD-TRV64E

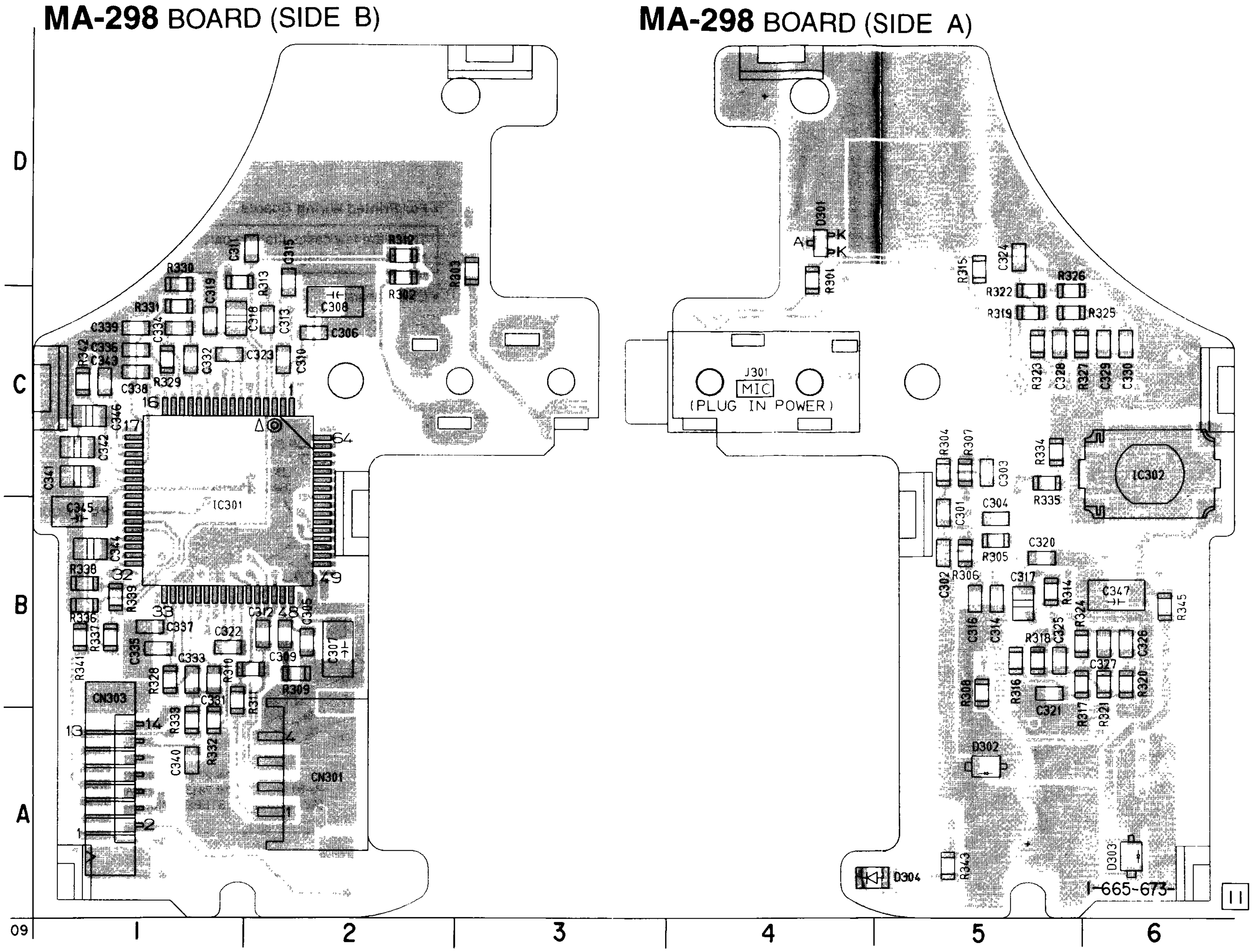

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J
MIC1
MIC
MIC2
CN301 4P
INT_MIC_L 4
GND 3
INT_MIC_R 2
GND 1
J301
R301 0 1/16W 1608
R302 0 1/16W 1608
R303 0 1/16W 1608
MIC (PLUG IN POWER)
D301 XX
IC301
STEREO MIC AMP
IC301 BA7780KV-E2
IC302
REMOTE COMMANDER RECEIVER
IC302 RS-180-T
D302 XX
D303 MA111-TX
D304 TLSU1002(TPX1,SONY)
(REC/BATTERY)
CN303 14P
1 XSIRCS_SIG
2 F_TALLY
3 REG_GND
4 A_4.9V
5 REG_GND
6 XWIND_ON
7 ZOOM_MIC_CONT
8 XMIC_MONO
9 EXT_MIC_DET
10 MIC_R
11 REG_GND
12 MIC_L
13 SHOE_MIC_L
14 AU_3.2V
TO VC-190 BOARD(10/12) CN208
(SEE PAGE 4-54)
LND301 SEIDEN
LND302 SEIDEN
* SIGNAL PATH
AUDIO SIGNAL
REC
PB
09

MA-298 BOARD

C301	B-5
C302	B-5
C303	C-5
C304	B-5
C305	B-2
C306	C-2
C307	B-2
C308	C-2
C309	B-2
C310	C-2
C311	D-2
C312	B-2
C313	C-2
C314	B-5
C315	D-2
C316	B-5
C317	B-5
C318	C-1
C319	C-1
C320	B-5
C321	B-5
C322	B-1
C323	C-1
C324	D-5
C325	B-5
C326	B-6
C327	B-6
C328	C-5
C329	C-6
C330	C-6
C331	B-1
C332	C-1
C333	B-1
C334	C-1
C335	B-1
C336	C-1
C337	B-1
C338	C-1
C339	C-1
C340	A-1
C341	C-1
C342	C-1
C343	C-1
C344	B-1
C345	B-1
C346	C-1
C347	B-6
CN301	A-2
CN303	A-1
D301	D-4
D302	A-5
D303	A-6
D304	A-4
IC301	B-1
IC302	C-6
J301	C-4
R301	D-4
R302	D-2
R303	D-3
R304	C-5
R305	B-5
R306	B-5
R307	C-5
R308	B-5
R309	B-2
R310	B-2
R311	B-1
R312	D-2
R313	D-1
R314	B-5
R315	D-5
R316	B-5
R317	B-5
R318	B-5
R319	C-5
R320	B-6
R321	B-6
R322	C-5
R323	C-5
R324	B-5
R325	C-5
R326	C-5
R327	C-5
R328	B-1
R329	C-1
R330	C-1
R331	C-1
R332	A-1
R333	A-1
R334	C-5
R335	C-5
R336	B-1
R337	B-1
R338	B-1
R339	B-1
R341	B-1
R342	C-1
R343	A-5
R345	B-6

MA-298 (STEREO MIC) (2.5 INCH LCD MODEL) PRINTED WIRING BOARD

– Ref No. MA-298 BOARD: 9,000 series –


MA-298 BOARD (SIDE B)

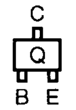
MA-298 BOARD (SIDE A)

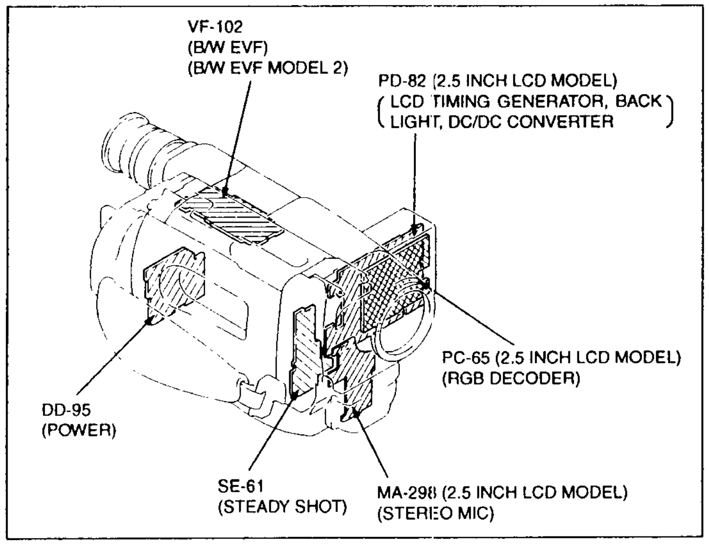
D
C
B
A
09
1
2
3
4
5
6
IC301
IC302
CN301
CN303
J301
MIC
(PLUG IN POWER)
D301
D302
D303
D304
A
K
1
16
17
32
33
48
49
64
13
14
2
R301 R302 R303 R304 R305 R306 R307 R308 R309 R310 R311 R312 R313 R314 R315 R316 R317 R318 R319 R320 R321 R322 R323 R324 R325 R326 R327 R328 R329 R330 R331 R332 R333 R334 R335 R336 R337 R338 R339 R340 R341 R342 R343 R345
C301 C302 C303 C304 C305 C306 C307 C308 C309 C310 C311 C313 C314 C315 C316 C317 C318 C319 C320 C321 C322 C323 C324 C325 C326 C327 C328 C329 C330 C331 C332 C333 C334 C335 C336 C337 C338 C339 C340 C341 C342 C343 C344 C345 C346 C347
1-665-673-
11

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor

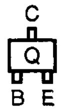


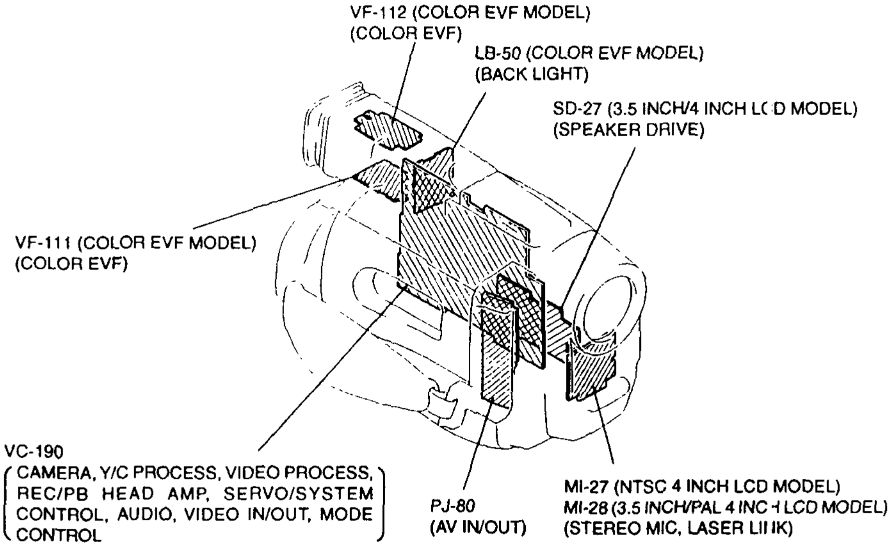

VF-102
(B/W EVF)
(B/W EVF MODEL 2)
PD-82 (2.5 INCH LCD MODEL)
(LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER)
PC-65 (2.5 INCH LCD MODEL)
(RGB DECODER)
DD-95
(POWER)
SE-61
(STEADY SHOT)
MA-298 (2.5 INCH LCD MODEL)
(STEREO MIC)

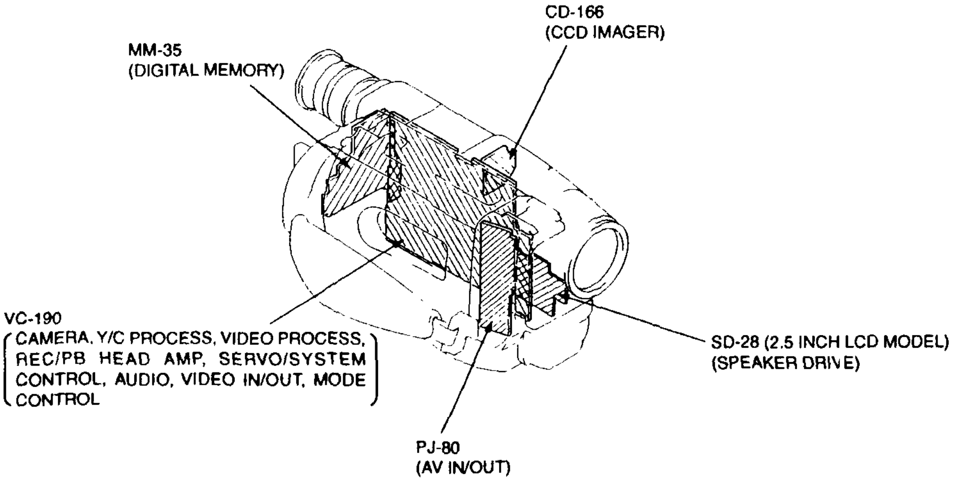
- **For Printed Wiring Boards.**

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor



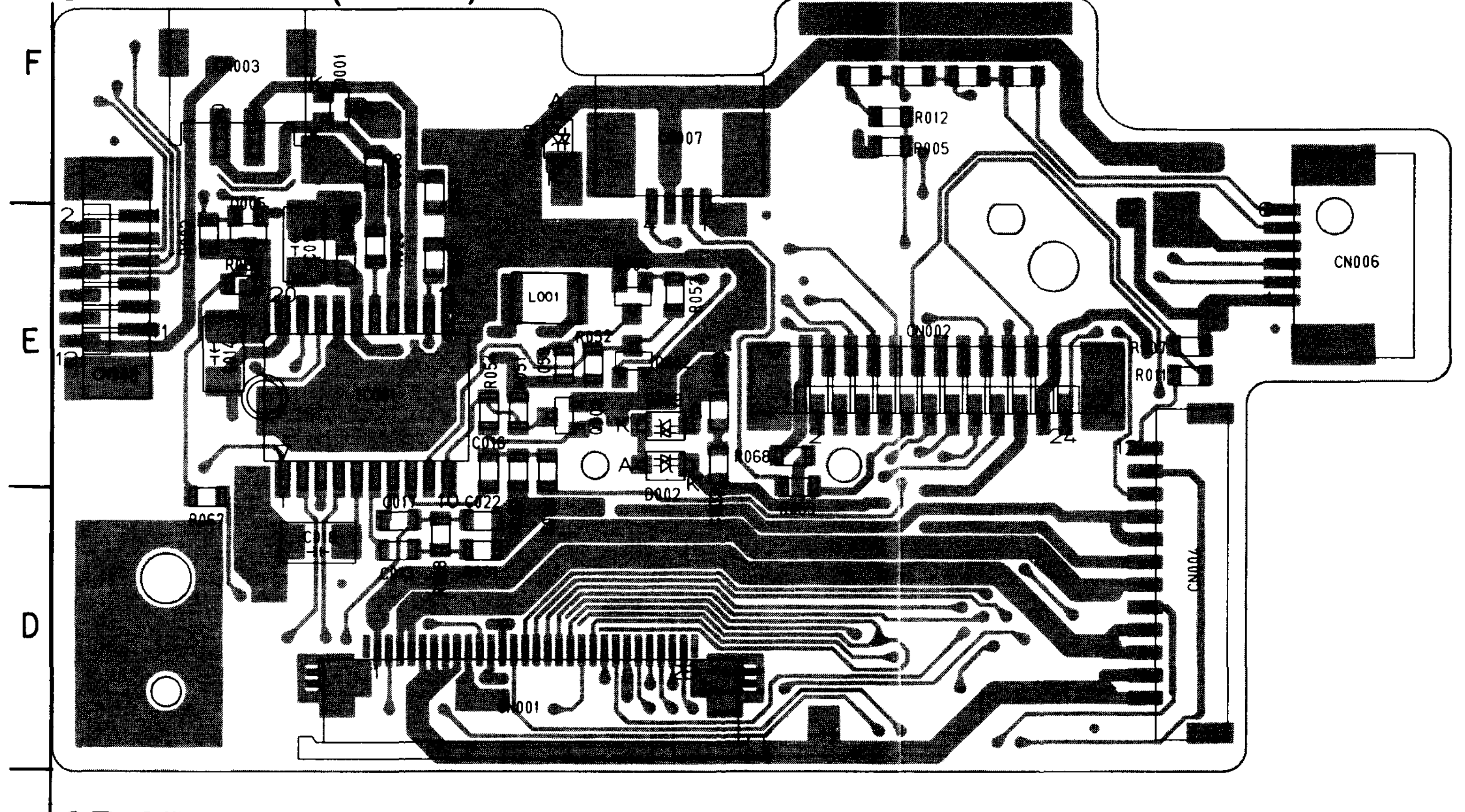

VF-112 (COLOR EVF MODEL)
(COLOR EVF)
LB-50 (COLOR EVF MODEL)
(BACK LIGHT)
SD-27 (3.5 INCH/4 INCH LCD MODEL)
(SPEAKER DRIVE)
VF-111 (COLOR EVF MODEL)
(COLOR EVF)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
PJ-80
(AV IN/OUT)
MI-27 (NTSC 4 INCH LCD MODEL)
MI-28 (3.5 INCH/PAL 4 INCH LCD MODEL)
(STEREO MIC, LASER LINK)


CD-166
(CCD IMAGER)
MM-35
(DIGITAL MEMORY)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
SD-28 (2.5 INCH LCD MODEL)
(SPEAKER DRIVE)
PJ-80
(AV IN/OUT)

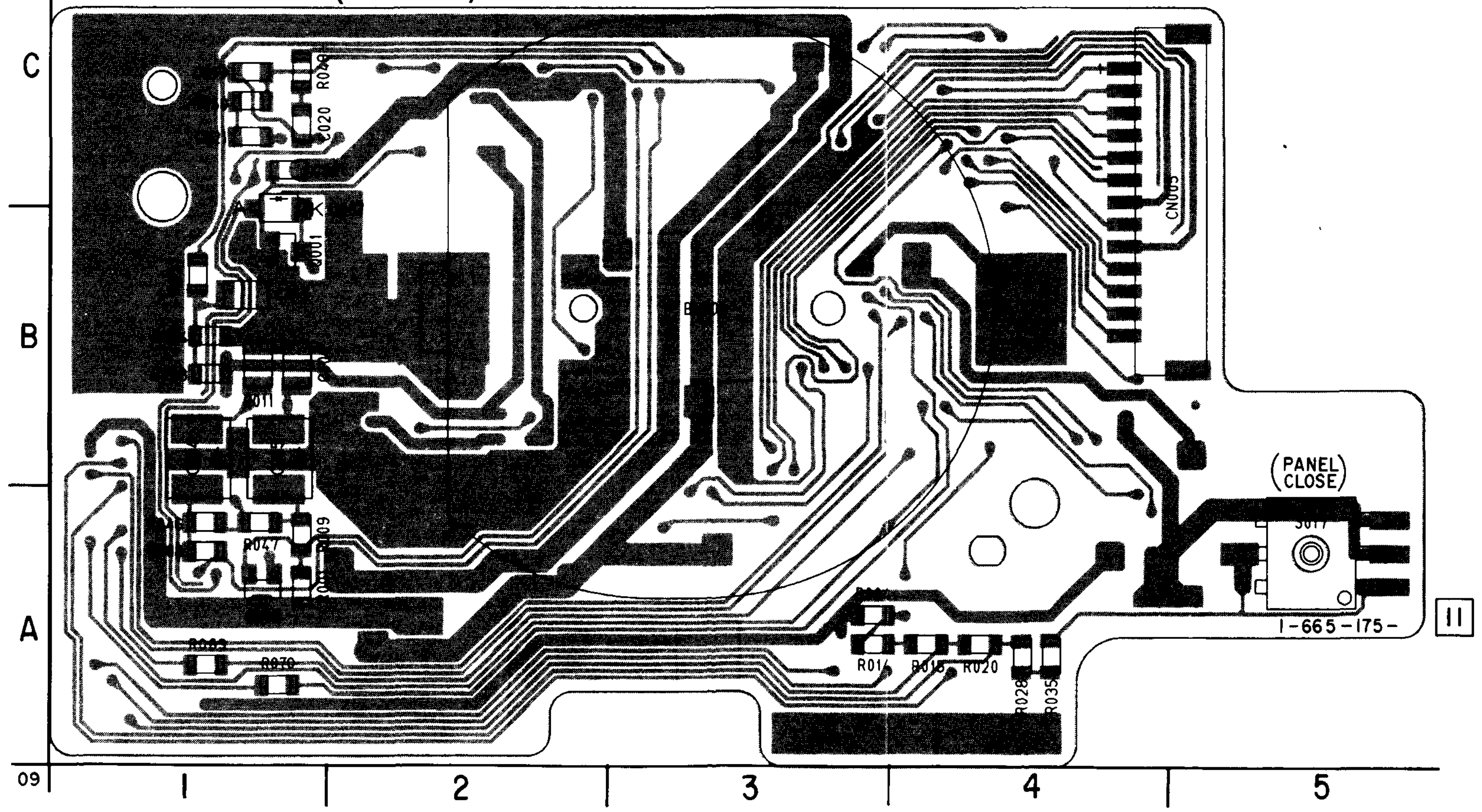
SD-27 (SPEAKER DRIVE (3.5 INCH/4 INCH LCD MODEL)), SD-28 (SPEAKER DRIVE (2.5 INCH LCD MODEL)) PRINTED WIRING BOARDS

– Ref No SD-27 BOARD· 6,000 series, SD-28 BOARD. 7,000 series –

SD-27 BOARD (SIDE B)


F
E
D
CN006
CN004
L001
Q002
R012
R005
D002
IC001

SD-27 BOARD (SIDE A)


C
B
A
CN005
(PANEL CLOSE)
S017
R014
R015
R020
R028
R035
1-665-175-
11
09
1
2
3
4
5

4-94

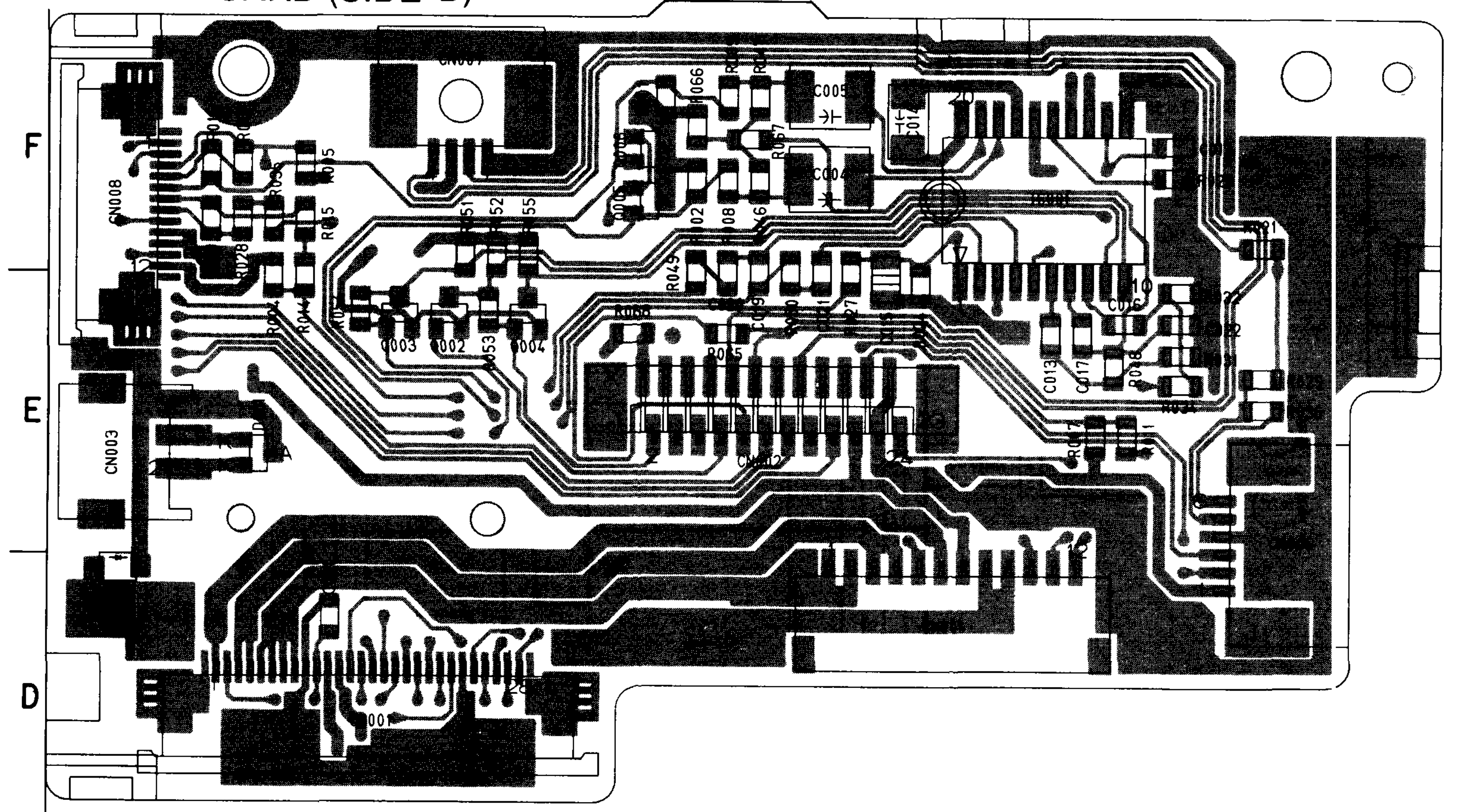
SD-27 BOARD

BH001	B-3
C001	C-1
C002	E-3
C003	E-3
C004	B-1
C005	B-1
C006	F-2
C007	F-2
C008	E-2
C009	B-1
C010	E-1
C011	B-1
C012	E-2
C013	D-2
C014	E-1
C015	B-1
C016	E-2
C017	D-2
C018	D-1
C019	C-1
C020	C-1
C021	C-1
C022	D-2
CN001	D-2
CN002	E-3
CN003	F-1
CN004	D-4
CN005	B-4
CN006	E-5
CN007	F-3
CN008	E-1
D001	F-2
D002	E-3
D003	E-3
D007	C-1
D010	F-2
IC001	E-1
L001	E-2
Q001	B-1
Q002	E-3
Q003	E-2
Q004	E-2
Q005	E-1
Q006	A-1
R001	A-1
R002	E-1
R004	A-3
R005	F-3
R007	E-5
R008	A-1
R009	A-1
R011	E-5
R012	F-3
R014	A-3
R015	A-4
R016	F-3
R020	A-4
R021	F-4
R023	B-1
R024	B-1
R025	E-2
R027	B-1
R028	A-4
R029	F-4
R031	D-2
R032	E-2
R034	E-2
R035	A-4
R036	F-4
R046	A-1
R047	A-1
R048	D-2
R049	C-1
R050	C-1
R051	E-2
R052	E-2
R053	E-3
R054	E-2
R055	E-2
R059	E-2
R065	E-3
R066	E-1
R067	D-1
R068	E-3
R069	A-1
R070	A-1
S017	A-5

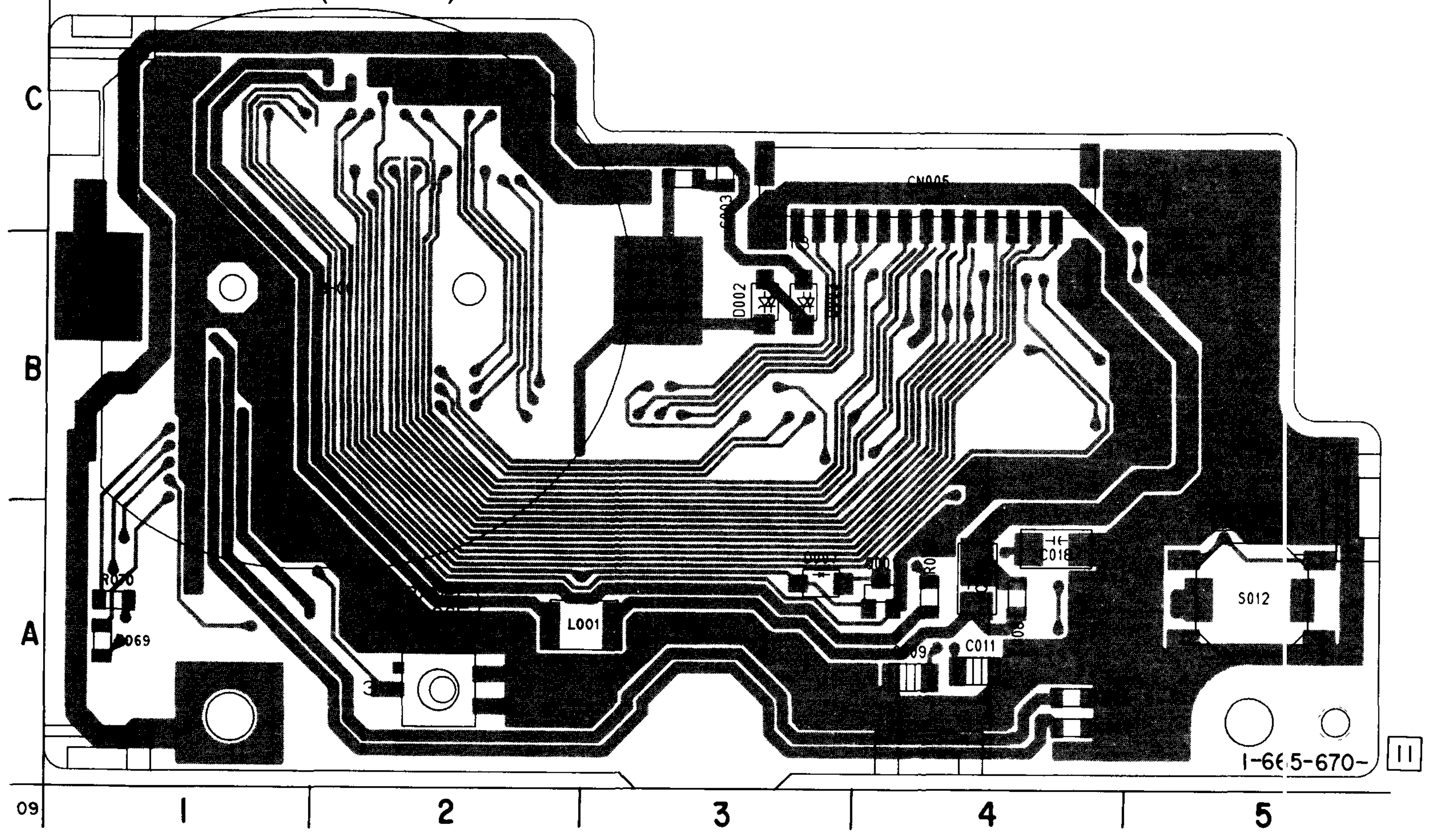
SD-28 BOARD

BH001	B-2
C001	D-2
C002	C-3
C003	C-3
C004	F-3
C005	F-3
C006	A-4
C007	A-4
C008	A-4
C009	A-4
C010	A-4
C011	A-4
C012	F-5
C013	E-4
C014	F-4
C015	E-3
C016	E-4
C017	E-4
C018	A-4
C019	E-3
C020	E-3
C021	E-3
C022	E-5
CN001	D-2
CN002	E-3
CN003	E-1
CN004	D-4
CN005	C-4
CN006	E-5
CN007	F-2
CN008	F-1
D001	E-1
D002	B-3
D003	B-3
D007	A-3
D010	D-1
IC001	F-4
L001	A-2
Q001	A-4
Q002	E-2
Q003	E-2
Q004	E-2
Q005	F-3
Q006	F-3
R001	F-3
R002	F-3
R004	E-1
R005	F-1
R007	E-4
R008	F-3
R009	F-3
R011	E-4
R012	F-1
R014	E-1
R015	F-1
R016	F-1
R020	F-1
R021	F-5
R023	A-4
R024	E-4
R025	F-5
R027	E-3
R028	F-1
R029	E-5
R031	E-5
R032	E-5
R034	E-5
R035	F-1
R036	E-5
R046	F-3
R047	F-3
R048	E-4
R049	E-3
R050	E-3
R051	F-2
R052	F-2
R053	E-2
R054	E-2
R055	F-2
R065	E-3
R066	F-3
R067	F-3
R068	E-3
R069	A-1
R070	A-1
S012	A-5
S017	A-2

SD-28 BOARD (SIDE B)


F
E
D
CN008
CN003
CN007
IC001
Q003
Q002
Q004

SD-28 BOARD (SIDE A)

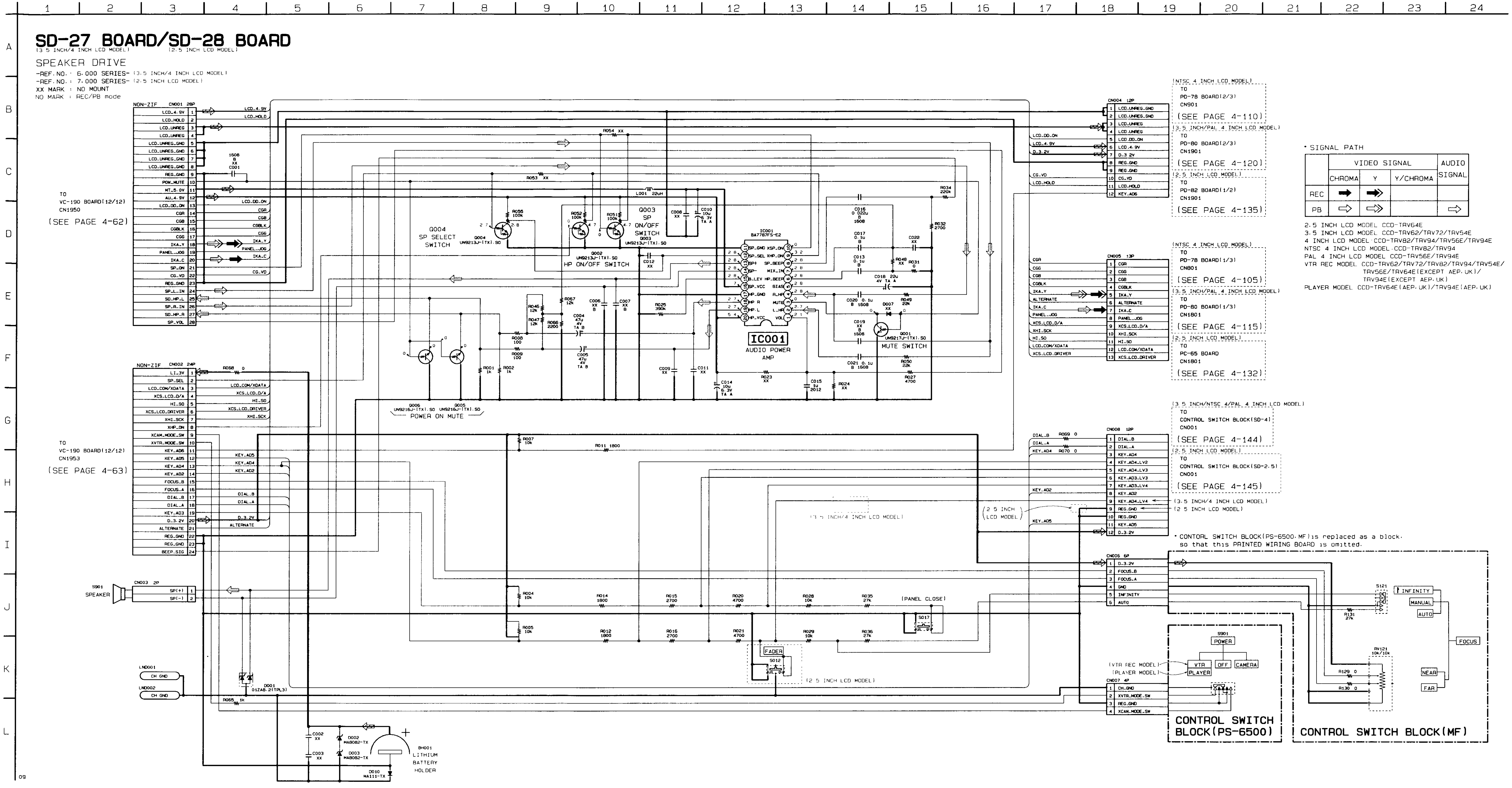

C
B
A
CN005
D002
L001
S012
C018
C011
R069
1-665-670-
11
09
1
2
3
4
5

SD-27 BOARD/SD-28 BOARD

(3.5 INCH/4 INCH LCD MODEL) (2.5 INCH LCD MODEL)

SPEAKER DRIVE

-REF. NO. : 6,000 SERIES- (3.5 INCH/4 INCH LCD MODEL)
-REF. NO. : 7,000 SERIES- (2.5 INCH LCD MODEL)
XX MARK : NO MOUNT
NO MARK : REC/PB mode


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
A B C D E F G H I J K L
NON-ZIF CN001 28P
LCD_4.9V
LCD_HOLD
LCD_UNREG
LCD_UNREG_GND
REG_GND
POW_MUTE
MT_5.0V
AU_4.9V
LCD_DD_ON
CGR
CGB
CGBLK
CGG
IKA_Y
PANEL_JOG
IKA_C
SP_ON
CG_VD
SP_L_IN
SD_HP_L
SP_R_IN
SD_HP_R
SP_VOL
TO VC-190 BOARD(12/12) CN1950 (SEE PAGE 4-62)
NON-ZIF CN002 24P
LI_3V
SP_SEL
LCD_COM/XDATA
XCS_LCD_D/A
HI_SO
XCS_LCD_DRIVER
XHI_SCK
XHP_ON
XCAM_MODE_SW
XVTR_MODE_SW
KEY_AD5
KEY_AD4
KEY_AD2
FOCUS_B
FOCUS_A
DIAL_B
DIAL_A
KEY_AD3
D_3.2V
ALTERNATE
BEEP_SIG
TO VC-190 BOARD(12/12) CN1953 (SEE PAGE 4-63)
S901 SPEAKER
CN003 2P
SP(+)
SP(-)
LND001 CH GND
LND002 CH GND
D001 01ZA8.2(TPL3)
Q004 SP SELECT SWITCH
Q002 UN9213J-(TX).SO HP ON/OFF SWITCH
Q003 SP ON/OFF SWITCH
Q006 UN9216J-(TX).SO
Q005 UN9216J-(TX).SO
POWER ON MUTE
IC001 BA7787FS-E2
IC001 AUDIO POWER AMP
SP_GND XSP_ON
SP_SEL XHP_ON
SPH SP_BEEP
MIX_IN
B_LEV HP_BEEP
SP_VCC BIAS
HP_GND R_HP
HP_R MUTE
HP_L L_HP
HP_VCC VOL
Q001 UN9217J-(TX).SO MUTE SWITCH
L001 22uH
BH001 LITHIUM BATTERY HOLDER
D002 MA8082-TX
D003 MA8082-TX
D010 MA111-TX
[PANEL CLOSE]
S017
FADER
S012
(2.5 INCH LCD MODEL)
(3.5 INCH/4 INCH LCD MODEL)
CN004 12P
LCD_UNREG_GND
LCD_UNREG
LCD_DD_ON
LCD_4.9V
D_3.2V
REG_GND
CG_VD
LCD_HOLD
KEY_AD6
(NTSC 4 INCH LCD MODEL) TO PD-78 BOARD(2/3) CN901 (SEE PAGE 4-110)
(3.5 INCH/PAL 4 INCH LCD MODEL) TO PD-80 BOARD(2/3) CN1901 (SEE PAGE 4-120)
(2.5 INCH LCD MODEL) TO PD-82 BOARD(1/2) CN1901 (SEE PAGE 4-135)
CN005 13P
CGR
CGG
CGB
CGBLK
IKA_Y
ALTERNATE
IKA_C
PANEL_JOG
XCS_LCD_D/A
XHI_SCK
HI_SO
LCD_COM/XDATA
XCS_LCD_DRIVER
(NTSC 4 INCH LCD MODEL) TO PD-78 BOARD(1/3) CN801 (SEE PAGE 4-105)
(3.5 INCH/PAL 4 INCH LCD MODEL) TO PD-80 BOARD(1/3) CN1801 (SEE PAGE 4-115)
(2.5 INCH LCD MODEL) TO PC-65 BOARD CN1801 (SEE PAGE 4-132)
CN008 12P
DIAL_B
DIAL_A
KEY_AD4
KEY_AD4_LV2
KEY_AD4_LV3
KEY_AD3_LV3
KEY_AD3_LV4
KEY_AD2
KEY_AD4_LV4
REG_GND
KEY_AD5
D_3.2V
(3.5 INCH/NTSC 4/PAL 4 INCH LCD MODEL) TO CONTROL SWITCH BLOCK(SD-4) CN001 (SEE PAGE 4-144)
(2.5 INCH LCD MODEL) TO CONTROL SWITCH BLOCK(SD-2.5) CN001 (SEE PAGE 4-145)
(3.5 INCH/4 INCH LCD MODEL)
(2.5 INCH LCD MODEL)
* CONTORL SWITCH BLOCK(PS-6500.MF)is replaced as a block. so that this PRINTED WIRING BOARD is omitted.
CN006 6P
D_3.2V
FOCUS_B
FOCUS_A
GND
INFINITY
AUTO
S121
INFINITY
MANUAL
AUTO
FOCUS
NEAR
FAR
RV121 10k/10k
R131 27k
R129 0
R130 0
S901
POWER
VTR
OFF
CAMERA
PLAYER
(VTR REC MODEL)
(PLAYER MODEL)
CN007 4P
CH_GND
XVTR_MODE_SW
REG_GND
XCAM_MODE_SW
CONTROL SWITCH BLOCK(PS-6500)
CONTROL SWITCH BLOCK(MF)
09

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»		
PB	⇨	⇨»		⇨

2.5 INCH LCD MODEL CCD-TRV64E
3.5 INCH LCD MODEL CCD-TRV62/TRV72/TRV54E
4 INCH LCD MODEL CCD-TRV82/TRV94/TRV56E/TRV94E
NTSC 4 INCH LCD MODEL CCD-TRV82/TRV94
PAL 4 INCH LCD MODEL CCD-TRV56E/TRV94E
VTR REC MODEL CCD-TRV62/TRV72/TRV82/TRV94/TRV54E/
TRV56E/TRV64E(EXCEPT AEP, UK)/
TRV94E(EXCEPT AEP, UK)
PLAYER MODEL CCD-TRV64E(AEP, UK)/TRV94E(AEP, UK)

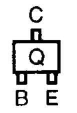
PD-78 (RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER) (NTSC 4 INCH LCD MODEL) PRINTED WIRING BOARD

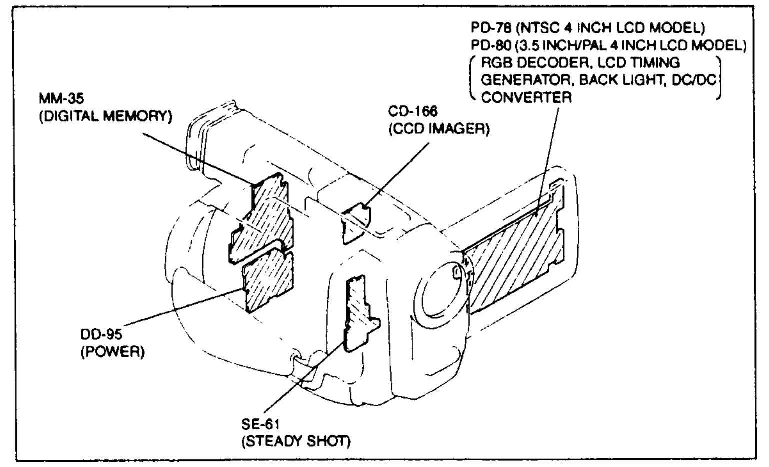
– Ref No. PD-78 BOARD: 4,000 series –

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor



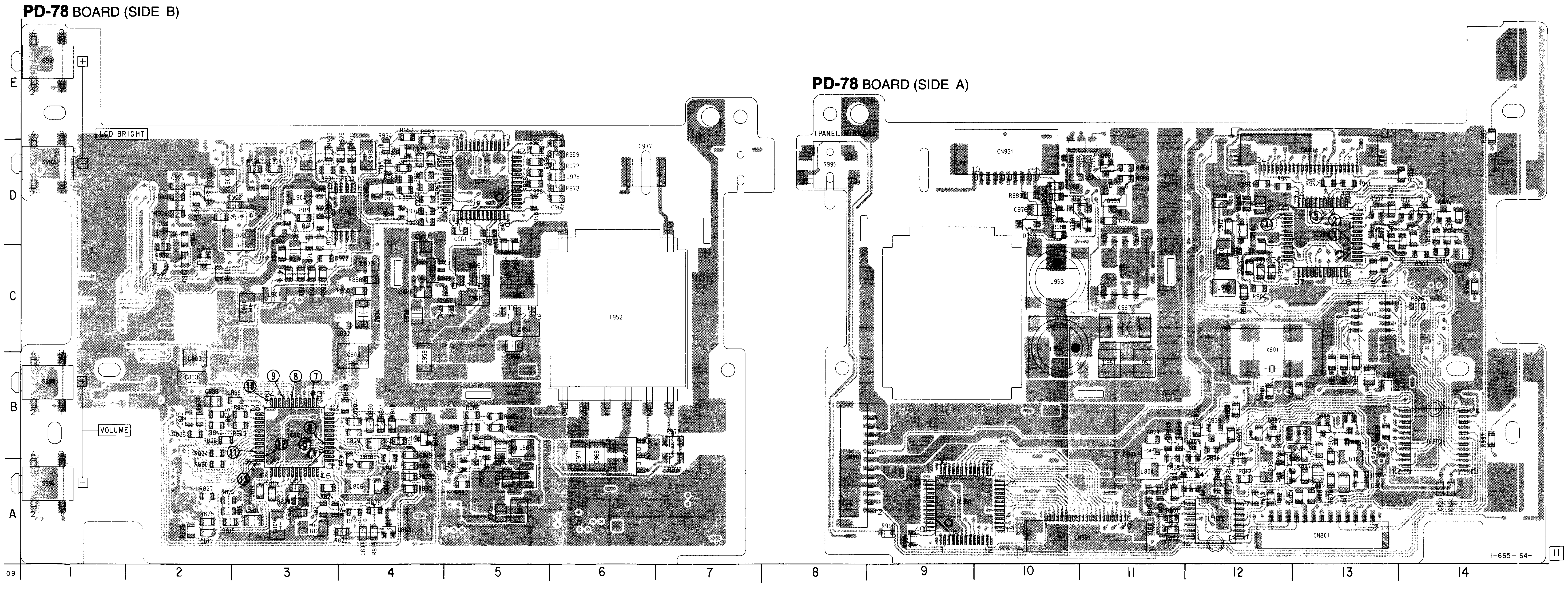

MM-35
(DIGITAL MEMORY)
CD-166
(CCD IMAGER)
PD-78 (NTSC 4 INCH LCD MODEL)
PD-80 (3.5 INCH/PAL 4 INCH LCD MODEL)
RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER
DD-95
(POWER)
SE-61
(STEADY SHOT)

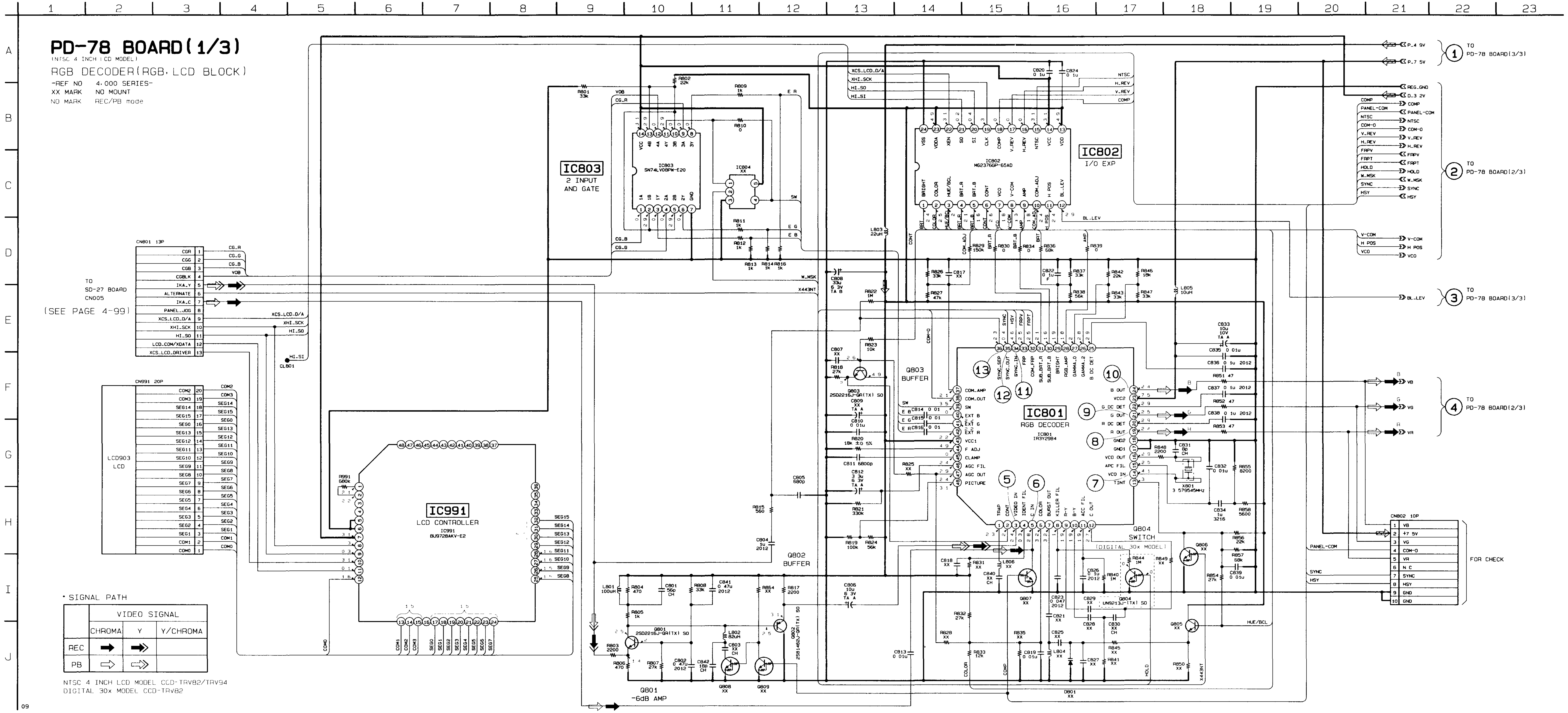
PD-78 BOARD

C801	A-13
C802	A-13
C803	B-13
C804	A-3
C805	A-2
C806	A-12
C807	A-4
C808	B-4
C809	A-3
C810	A-3
C811	A-3
C812	A-3
C813	B-12
C814	A-3
C815	A-3
C816	A-12
C817	A-2
C818	A-4
C819	B-4
C820	A-14
C821	A-4
C822	B-2
C823	B-4
C824	A-14
C825	A-11
C826	B-4
C827	B-11
C828	B-4
C829	B-4
C830	B-4
C831	B-13
C832	C-4
C833	B-2
C834	C-4
C835	B-3
C836	B-2
C837	B-13
C838	B-13
C839	B-12
C840	A-4
C841	A-13
C842	B-13
C901	C-3
C902	C-14
C903	C-12
C904	D-3
C905	C-2
C906	D-2
C907	C-2
C908	C-12
C909	D-12
C910	D-14
C911	D-14
C912	D-12
C913	D-12
C914	D-3
C915	D-3
C916	C-3
C917	D-3
C918	D-4
C919	D-3
C920	D-3
C921	D-3
C922	D-3
C923	D-3
C924	D-2
C951	C-5
C952	D-11
C953	D-10
C954	D-11
C955	D-11
C956	D-5
C957	D-4
C958	D-5
C959	B-4
C960	C-5
C961	D-5
C962	D-6
C963	D-4
C964	C-5
C965	D-10
C966	C-5
C967	C-11
C968	B-6
C969	C-4
C970	C-4
C971	B-6
C972	D-4
C973	A-5
C974	B-5
C975	A-5
C976	D-10
C977	D-6
C978	D-6
C979	D-4
CN801	A-13
CN802	C-13
CN901	B-8
CN902	D-13
CN951	D-10
CN991	A-10
D801	B-11
D901	D-2
D902	D-12
D903	D-2
D951	C-4
D952	C-5
D953	D-10
D954	D-11
FB901	D-12
IC801	B-3
IC802	B-14
IC803	A-12
IC804	A-12
IC901	D-13
IC902	D-4
IC951	D-5
IC991	A-9
L801	A-13
L802	B-13
L803	C-4
L804	A-11
L805	B-2
L806	A-4
L901	C-3
L902	D-2
L903	C-12
L904	D-3
L951	B-11
L952	B-11
L953	C-10
L954	C-10
L955	A-5
L956	B-5
L957	A-5
Q801	A-12
Q802	A-12
Q803	A-4
Q804	B-4
Q805	B-12
Q806	B-12
Q807	B-12
Q808	B-13
Q809	B-13
Q901	D-14
Q902	D-13
Q903	C-2
Q904	D-14
Q905	D-13
Q906	D-14
Q951	D-11
Q952	D-4
Q953	D-11
Q954	D-4
Q955	C-5
Q956	C-5
Q957	B-6
Q958	D-11
Q959	A-5
Q960	B-5
Q961	A-5
R801	A-11
R802	A-11
R803	A-13
R804	A-13
R805	B-13
R806	A-13
R807	A-13
R808	A-13
R809	A-11
R810	A-11
R811	A-12
R812	A-12
R813	A-12
R814	A-12
R815	A-2
R816	A-11
R817	A-12
R818	A-4
R819	A-3
R820	A-3
R821	A-3
R822	A-2
R823	A-4
R824	A-3
R825	A-4
R826	A-2
R827	A-2
R828	A-4
R829	A-2
R830	A-2
R831	A-4
R832	A-4
R833	A-4
R834	B-2
R835	A-4
R836	B-2
R837	B-2
R838	B-2
R839	B-13
R840	B-4
R841	B-4
R842	B-2
R843	B-3
R844	B-4
R845	B-11
R846	B-2
R847	B-3
R848	B-12
R849	B-4
R850	B-11
R851	B-13
R852	B-13
R853	B-13
R854	B-12
R855	C-4
R856	B-12
R857	B-12
R858	C-4
R864	B-13
R901	C-12
R902	C-2
R903	C-2
R904	C-12
R905	C-13
R906	C-12
R907	C-14
R908	C-14
R909	D-12
R910	C-12
R911	D-14
R912	C-12
R913	D-14
R914	D-14
R915	D-14
R916	D-13
R917	D-3
R918	C-12
R919	D-3
R920	D-3
R921	C-3
R922	C-3
R923	C-3
R924	C-3
R925	C-3
R926	D-2
R927	C-3
R928	D-14
R929	D-4
R930	D-4
R931	D-3
R932	D-4
R933	D-3
R934	D-3
R935	D-3
R936	C-14
R937	D-2
R938	D-2
R939	D-2
R940	D-13
R941	D-12
R942	D-13
R943	D-13
R944	C-13
R951	D-10
R952	E-4
R953	E-4
R954	D-4
R955	D-4
R956	D-11
R957	D-4
R958	D-11
R959	D-6
R960	D-4
R961	D-4
R962	D-4
R963	D-4
R964	D-6
R965	D-5
R966	D-5
R967	D-4
R968	D-5
R969	D-4
R970	D-4
R971	D-4
R972	D-6
R973	D-6
R974	C-5
R975	D-5
R976	D-10
R977	B-6
R978	B-6
R979	D-10
R980	D-10
R981	B-5
R982	A-5
R983	D-10
R984	B-5
R985	B-5
R986	B-5
R987	B-5
R991	A-9
R995	E-14
R996	C-14
R997	B-14
R998	A-9
S991	E-1
S992	D-1
S993	B-1
S994	A-1
S995	D-8
T951	C-11
T952	C-6
X801	B-12

PD-78 BOARD (SIDE B)

PD-78 BOARD (SIDE A)




1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A B C D E F G H I J
IC803
2 INPUT
AND GATE
IC803
SN74LV08PW-E20
IC804
IC802
I/O EXP
IC802
M62376GP-65AD
IC801
RGB DECODER
IC801
IR3Y29B4
IC991
LCD CONTROLLER
IC991
BU9728AKV-E2
CN801 13P
CGR
CGG
CGB
CGBLK
IKA.Y
ALTERNATE
IKA.C
PANEL.JOG
XCS.LCD.D/A
XHI.SCK
HI.SO
LCD.COM/XDATA
XCS.LCD.DRIVER
TO
SD-27 BOARD
CN005
(SEE PAGE 4-99)
CN991 20P
LCD903
LCD
Q803
BUFFER
Q802
BUFFER
Q801
-6dB AMP
Q804
SWITCH
(DIGITAL 30x MODEL)
X801
3.579545MHz
TO
PD-78 BOARD(3/3)
TO
PD-78 BOARD(2/3)
TO
PD-78 BOARD(3/3)
TO
PD-78 BOARD(2/3)
P.4.9V
P.7.5V
REG.GND
D.3.2V
COMP
PANEL-COM
NTSC
COM-O
V.REV
H.REV
FRPV
FRPT
HOLD
W.MSK
SYNC
HSY
V-COM
H POS
VCO
BL.LEV
VB
VG
VR
CN802 10P
FOR CHECK
09

PD-78 BOARD(1/3)

(NTSC 4 INCH LCD MODEL)

RGB DECODER(RGB, LCD BLOCK)

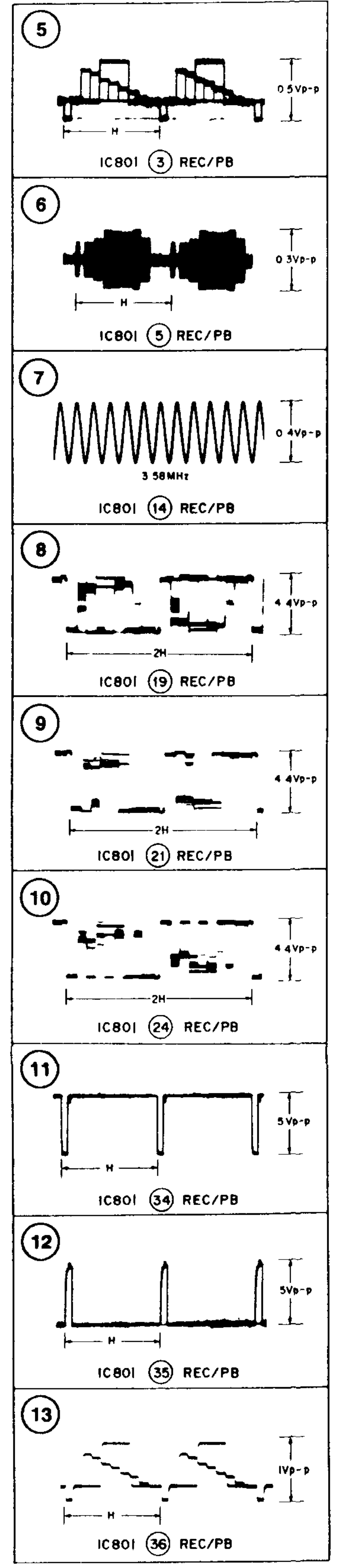
-REF NO 4,000 SERIES-
XX MARK NO MOUNT
NO MARK REC/PB mode

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	
PB	⇨	⇨»	

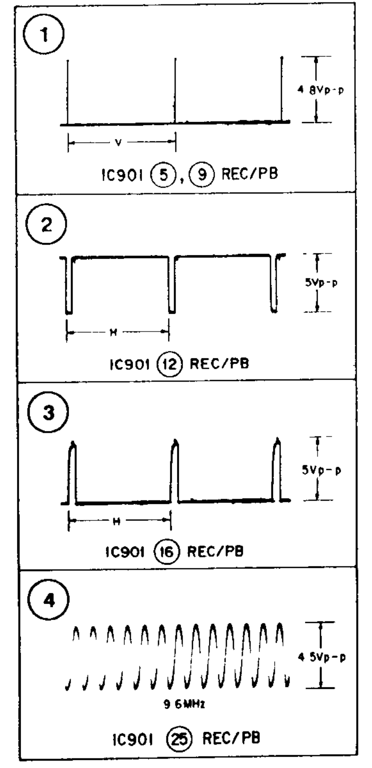
NTSC 4 INCH LCD MODEL CCD-TRV82/TRV94
DIGITAL 30x MODEL CCD-TRV82

PD-78 BOARD(RGB, LCD BLOCK)



RGB DECODER
PD-78 (1/3) (NTSC 4 INCH LCD MODEL)

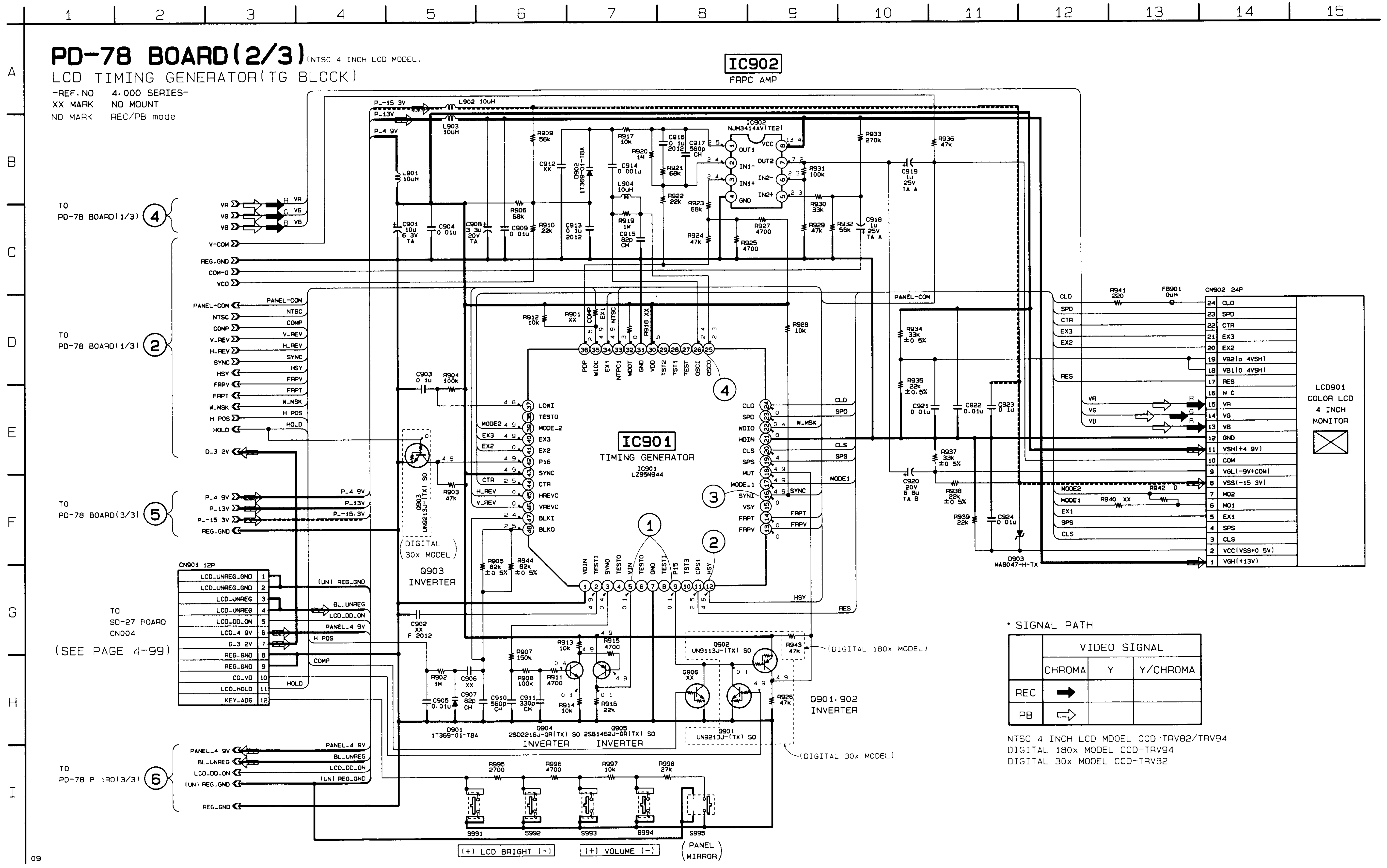
PD-78 BOARD(TG BLOCK)


①
4 8Vp-p
V
IC901 ⑤, ⑨ REC/PB
②
5Vp-p
H
IC901 ⑫ REC/PB
③
5Vp-p
H
IC901 ⑯ REC/PB
④
4 5Vp-p
9 6MHz
IC901 ㉕ REC/PB

PD-78 BOARD(2/3) (NTSC 4 INCH LCD MODEL)

LCD TIMING GENERATOR(TG BLOCK)

-REF.NO 4.000 SERIES-
XX MARK NO MOUNT
NO MARK REC/PB mode


IC902
FRPC AMP
IC902 NJM3414AV(TE2)
IC901
TIMING GENERATOR
IC901 LZ95H44
TO PD-78 BOARD(1/3) ④
TO PD-78 BOARD(1/3) ②
TO PD-78 BOARD(3/3) ⑤
TO PD-78 BOARD(3/3) ⑥
TO SG-27 BOARD CN004
[SEE PAGE 4-99]
CN901 12P
CN902 24P
LCD901
COLOR LCD
4 INCH
MONITOR
Q903
INVERTER
(DIGITAL 30x MODEL)
(DIGITAL 180x MODEL)
Q901,902
INVERTER
Q904
2SD2216J-QR(TX) SO
INVERTER
Q905
2SB1462J-QR(TX) SO
INVERTER
D901 1T369-01-T8A
D903 MA8047-H-TX
[+] LCD BRIGHT [-]
[+] VOLUME [-]
PANEL MIRROR
S991
S992
S993
S994
S995
P_-15 3V
P_13V
P_4 9V
L902 10uH
L903 10uH
L901 10uH
VR
VG
VB
REG_GND
COM+D
VCO
PANEL_COM
NTSC
COMP
V_REV
H_REV
SYNC
HSY
FRPV
FRPT
H_MSK
H POS
HOLD
D_3 2V
P_4 9V
P_13V
P_-15 3V
REG_GND
LCD_UNREG_GND
LCD_UNREG_GND
LCD_UNREG
LCD_UNREG
LCD_DD_ON
LCD_4 9V
D_3 2V
H POS
REG_GND
REG_GND
CS_VD
LCD_HOLD
KEY_AD6
(UN) REG_GND
BL_UNREG
LCD_DD_ON
PANEL_4 9V
CLD
SPD
CTR
EX3
EX2
VB2(0 4VSH)
VB1(0 4VSH)
RES
N C
VR
VG
VB
GND
VSH(+4 9V)
COM
VGL(-9V+COM)
VSS(-15 3V)
MOD2
MOD1
EX1
SPS
CLS
VCC(VSS+0 5V)
VGH(+13V)
PANEL_COM
①
②
③
④
09

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

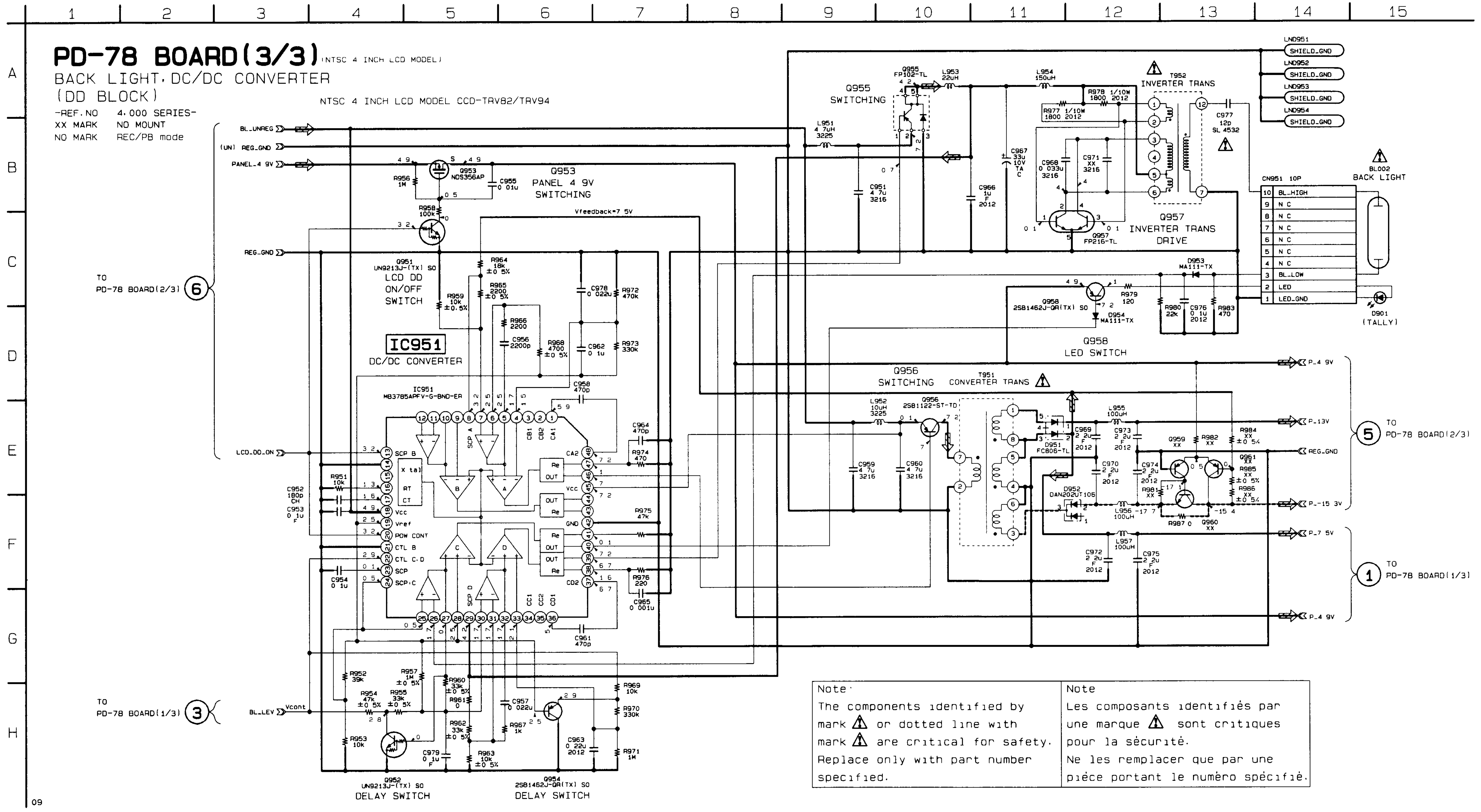
NTSC 4 INCH LCD MDOEL CCD-TRV82/TRV94
DIGITAL 180x MODEL CCD-TRV94
DIGITAL 30x MODEL CCD-TRV82

PD-78 BOARD(3/3) (NTSC 4 INCH LCD MODEL)

BACK LIGHT, DC/DC CONVERTER
(DD BLOCK)

-REF.NO 4.000 SERIES-
XX MARK NO MOUNT
NO MARK REC/PB mode

NTSC 4 INCH LCD MODEL CCD-TRV82/TRV94


BL_UNREG
(UN) REG_GND
PANEL_4 9V
REG_GND
LCD_DD_ON
BL_LEV
TO PD-78 BOARD(2/3) ⑥
TO PD-78 BOARD(1/3) ③
TO PD-78 BOARD(2/3) ⑤
TO PD-78 BOARD(1/3) ①
Q953 NDS356AP
Q953
PANEL 4 9V
SWITCHING
Q951
UN9213J-(TX) SO
LCD DD
ON/OFF
SWITCH
IC951
DC/DC CONVERTER
IC951 MB3785APFV-G-BND-ER
Q952
UN9213J-(TX) SO
DELAY SWITCH
Q954
2SB1462J-QR(TX) SO
DELAY SWITCH
Q955
SWITCHING
Q956
SWITCHING
T951
CONVERTER TRANS
Q957
INVERTER TRANS
DRIVE
T952
INVERTER TRANS
Q958
2SB1462J-QR(TX) SO
LED SWITCH
Q953 MA111-TX
D954 MA111-TX
CN951 10P
BL_HIGH
N C
N C
N C
N C
N C
BL_LOW
LED
LED_GND
BL002
BACK LIGHT
D901
(TALLY)
LND951
SHIELD_GND
P_4 9V
P_13V
REG_GND
P_-15 3V
P_7 5V
P_4 9V
VFeedback+7 5V
09

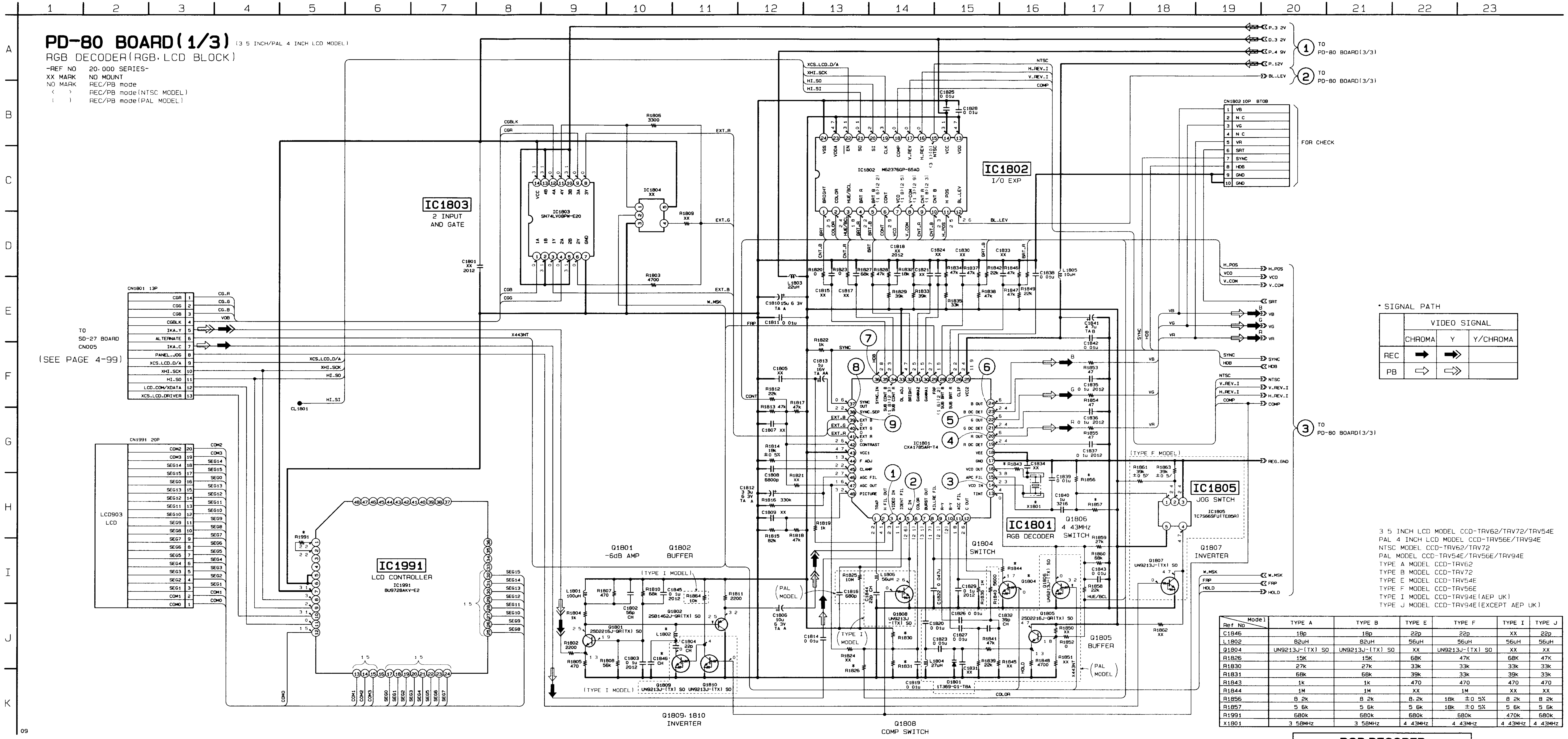
Note:	Note
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER
PD-78 (2/3), PD-78 (3/3) (NTSC 4 INCH LCD MODEL)

PD-80 BOARD(1/3) (3 5 INCH/PAL 4 INCH LCD MODEL)

RGB DECODER(RGB, LCD BLOCK)

-REF NO	20,000 SERIES-
XX MARK	NO MOUNT
NO MARK	REC/PB mode
‹ ›	REC/PB mode(NTSC MODEL)
( )	REC/PB mode(PAL MODEL)



IC1803
2 INPUT AND GATE
IC1803 SN74LV08PW-E20
IC1804
IC1802
I/O EXP
IC1802 M62376GP-65AD
IC1801
RGB DECODER
IC1801 CXA1785AR-T4
IC1805
JOG SWITCH
IC1805 TC7S66FU(TE85R)
IC1991
LCD CONTROLLER
IC1991 BU9728AKV-E2
X1801
4 43MHZ SWITCH
Q1801
-6dB AMP
Q1802
BUFFER
Q1804
SWITCH
Q1805
BUFFER
Q1807
INVERTER
Q1808
COMP SWITCH
Q1809, 1810
INVERTER
CN1801 13P
TO SD-27 BOARD CN005
(SEE PAGE 4-99)
CN1991 20P
LCD903 LCD
CN1802 10P
FOR CHECK
① TO PD-80 BOARD(3/3)
② TO PD-80 BOARD(3/3)
③ TO PD-80 BOARD(3/3)
(TYPE I MODEL)
(TYPE F MODEL)
(PAL MODEL)
COLOR

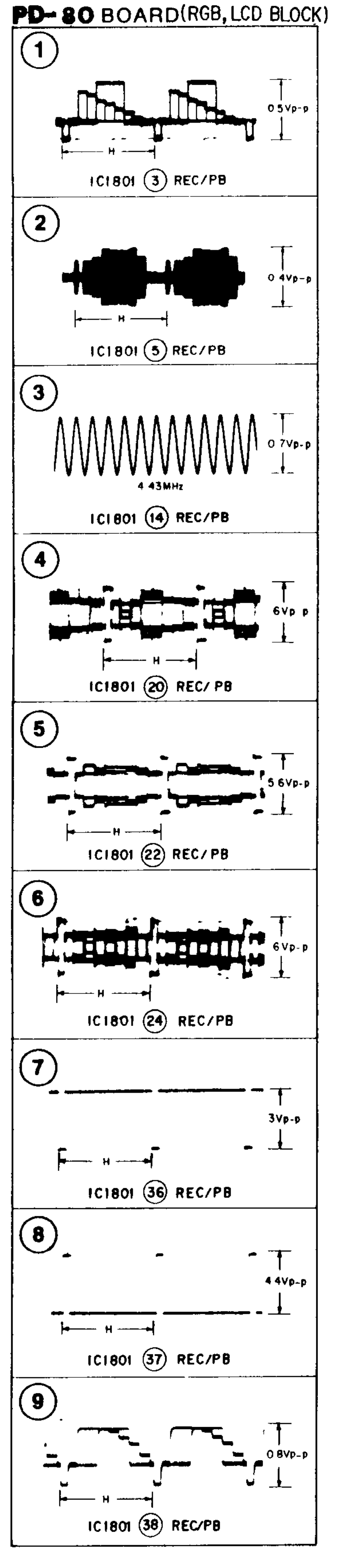
* SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡➡	
PB	⇨	⇨⇨	

3 5 INCH LCD MODEL CCD-TRV62/TRV72/TRV54E
PAL 4 INCH LCD MODEL CCD-TRV56E/TRV94E
NTSC MODEL CCD-TRV62/TRV72
PAL MODEL CCD-TRV54E/TRV56E/TRV94E
TYPE A MODEL CCD-TRV62
TYPE B MODEL CCD-TRV72
TYPE E MODEL CCD-TRV54E
TYPE F MODEL CCD-TRV56E
TYPE I MODEL CCD-TRV94E(AEP UK)
TYPE J MODEL CCD-TRV94E(EXCEPT AEP UK)

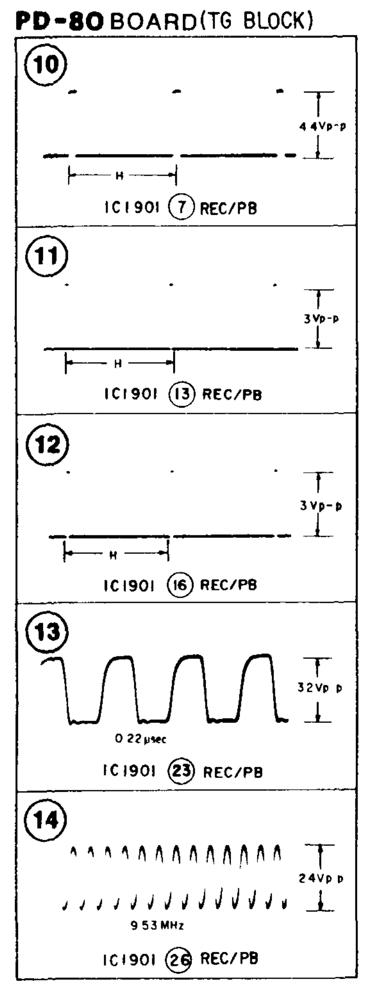
Model / Ref No	TYPE A	TYPE B	TYPE E	TYPE F	TYPE I	TYPE J
C1846	18p	18p	22p	22p	XX	22p
L1802	82uH	82uH	56uH	56uH	56uH	56uH
Q1804	UN9213J-(TX) SO	UN9213J-(TX) SO	XX	UN9213J-(TX) SO	XX	XX
R1826	15K	15K	68K	47K	68K	47K
R1830	27k	27k	33k	33k	33k	33k
R1831	68k	68k	39k	33k	39k	33k
R1843	1k	1k	470	470	470	470
R1844	1M	1M	XX	1M	XX	XX
R1856	8 2k	8 2k	8.2k	18k ±0 5%	8 2k	8 2k
R1857	5 6k	5 6k	5 6k	18k ±0 5%	5 6k	5 6k
R1991	680k	680k	680k	680k	470k	680k
X1801	3 58MHz	3 58MHz	4 43MHz	4 43MHz	4 43MHz	4 43MHz

PD-80 BOARD(RGB, LCD BLOCK)



RGB DECODER

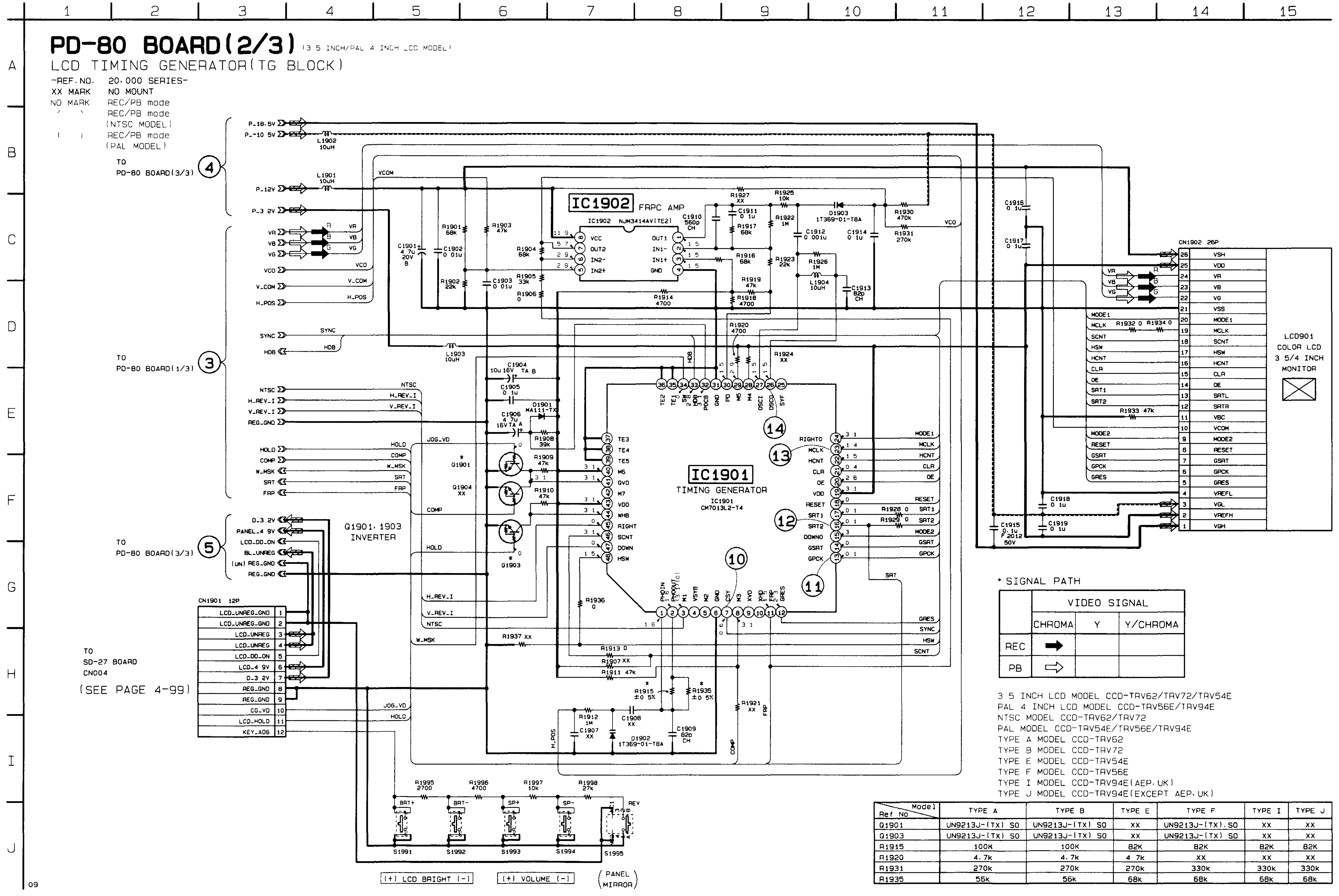
PD-80 (1/3) (3.5 INCH/PAL 4 INCH LCD MODEL)



PD-80 BOARD(2/3) (3.5 INCH/PAL 4 INCH LCD MODEL)

LCD TIMING GENERATOR(TG BLOCK)

-REF.NO. 20,000 SERIES-
XX MARK NO MOUNT
NO MARK REC/PB mode
‹ › REC/PB mode (NTSC MODEL)
( ) REC/PB mode (PAL MODEL)


TO PD-80 BOARD(3/3) ④
TO PD-80 BOARD(1/3) ③
TO PD-80 BOARD(3/3) ⑤
TO SD-27 BOARD CN004 (SEE PAGE 4-99)
IC1902 FRPC AMP
IC1901 TIMING GENERATOR
Q1901-1903 INVERTER
LCD901 COLOR LCD 3.5/4 INCH MONITOR
(+) LCD BRIGHT (-)
(+) VOLUME (-)
(PANEL MIRROR)

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

3.5 INCH LCD MODEL CCD-TRV62/TRV72/TRV54E
PAL 4 INCH LCD MODEL CCD-TRV56E/TRV94E
NTSC MODEL CCD-TRV62/TRV72
PAL MODEL CCD-TRV54E/TRV56E/TRV94E
TYPE A MODEL CCD-TRV62
TYPE B MODEL CCD-TRV72
TYPE E MODEL CCD-TRV54E
TYPE F MODEL CCD-TRV56E
TYPE I MODEL CCD-TRV94E(AEP, UK)
TYPE J MODEL CCD-TRV94E(EXCEPT AEP, UK)

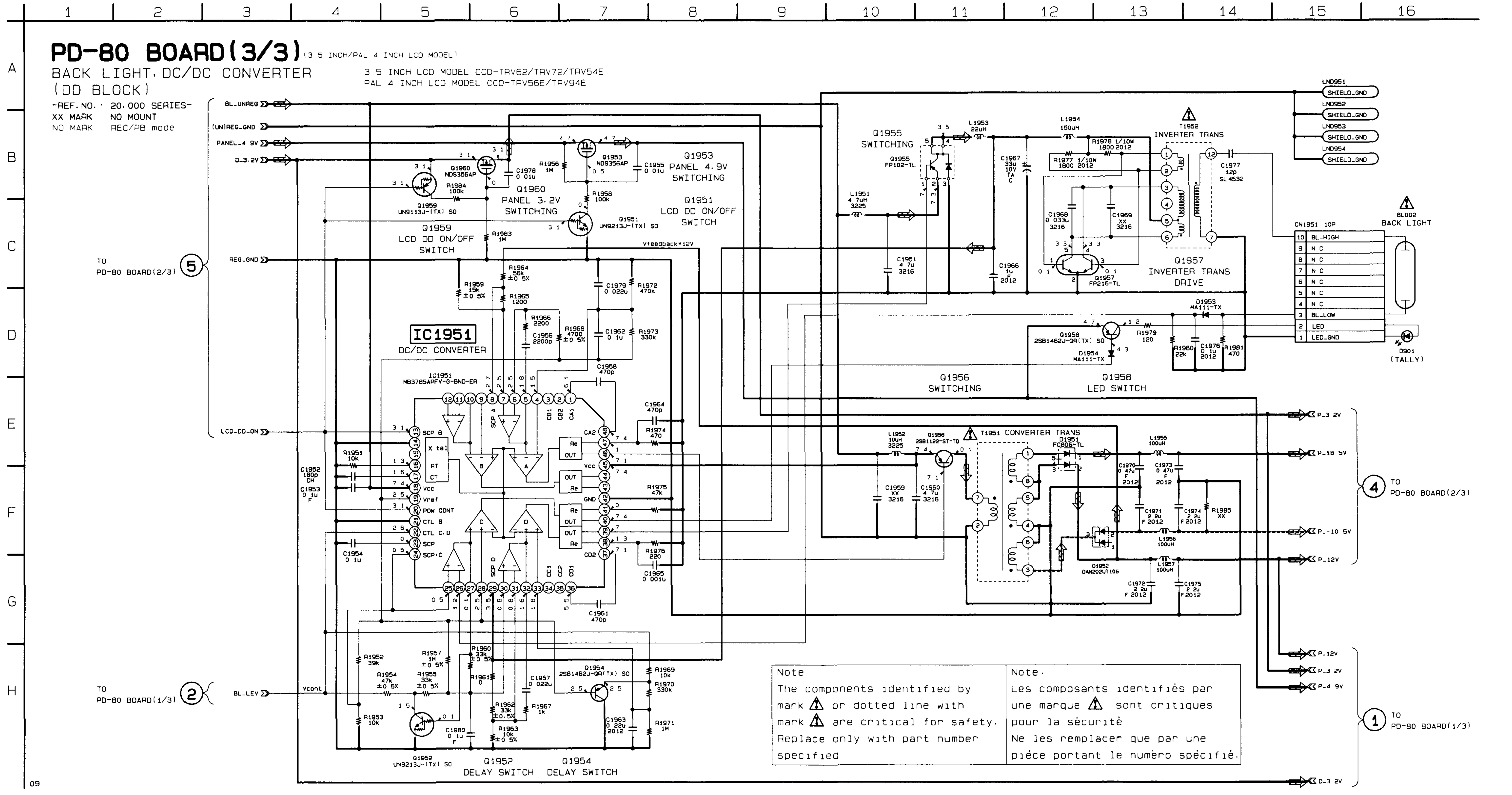
Model / Ref No	TYPE A	TYPE B	TYPE E	TYPE F	TYPE I	TYPE J
Q1901	UN9213J-(TX) SO	UN9213J-(TX) SO	XX	UN9213J-(TX).SO	XX	XX
Q1903	UN9213J-(TX) SO	UN9213J-(TX) SO	XX	UN9213J-(TX) SO	XX	XX
R1915	100K	100K	82K	82K	82K	82K
R1920	4.7k	4.7k	4 7k	XX	XX	XX
R1931	270k	270k	270k	330k	330k	330k
R1935	56k	56k	68k	68k	68k	68k

PD-80 BOARD(3/3) (3.5 INCH/PAL 4 INCH LCD MODEL)

BACK LIGHT, DC/DC CONVERTER (DD BLOCK)

3.5 INCH LCD MODEL CCD-TRV62/TRV72/TRV54E
PAL 4 INCH LCD MODEL CCD-TRV56E/TRV94E

-REF.NO. 20,000 SERIES-
XX MARK NO MOUNT
NO MARK REC/PB mode


TO PD-80 BOARD(2/3) ⑤
TO PD-80 BOARD(1/3) ②
TO PD-80 BOARD(2/3) ④
TO PD-80 BOARD(1/3) ①
IC1951 DC/DC CONVERTER
Q1960 PANEL 3.2V SWITCHING
Q1959 LCD DD ON/OFF SWITCH
Q1953 PANEL 4.9V SWITCHING
Q1951 LCD DD ON/OFF SWITCH
Q1955 SWITCHING
T1952 INVERTER TRANS
Q1957 INVERTER TRANS DRIVE
ND002 BACK LIGHT
D901 (TALLY)
Q1956 SWITCHING
Q1958 LED SWITCH
T1951 CONVERTER TRANS
Q1952 DELAY SWITCH
Q1954 DELAY SWITCH

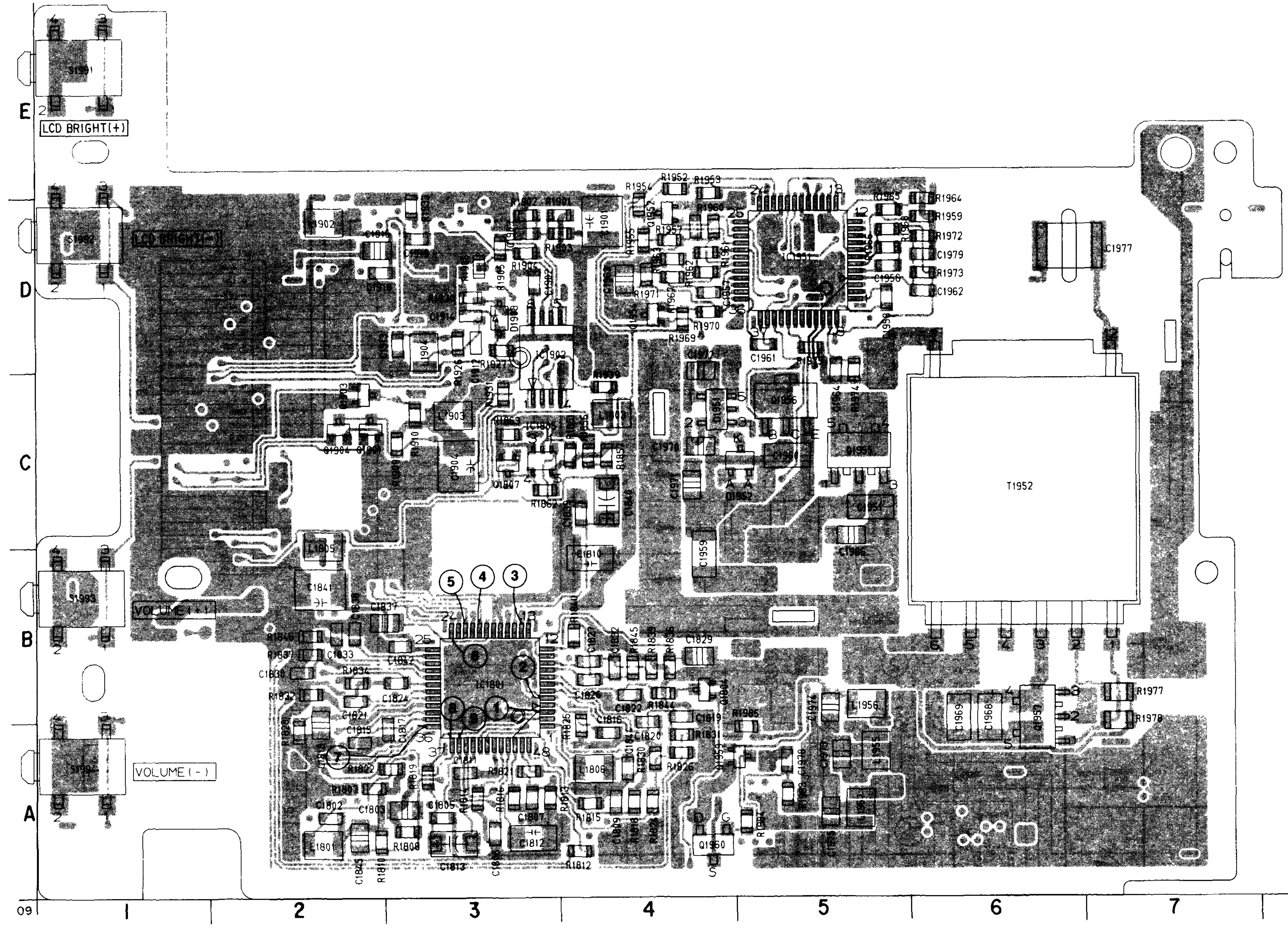
Note	Note.
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER
PD-80 (2/3), PD-80 (3/3) (3.5 INCH/PAL 4 INCH LCD MODEL)

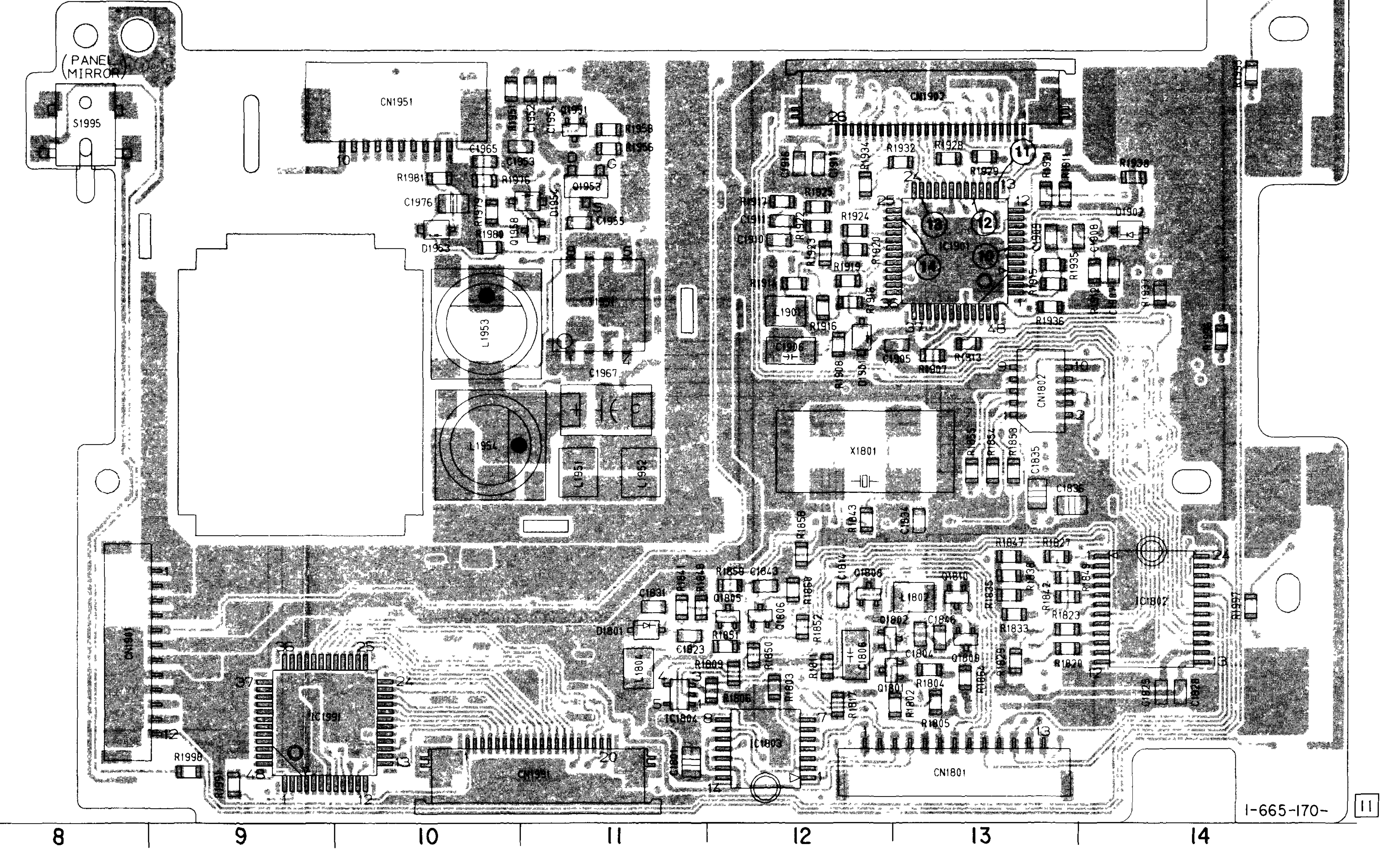
PD-80 (RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER) (3.5 INCH/PAL 4 INCH LCD MODEL) PRINTED WIRING BOARD

– Ref No PD-80 BOARD 20,000 series –

PD-80 BOARD (SIDE B)



PD-80 BOARD (SIDE A)



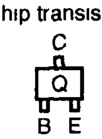
PD-80 BOARD

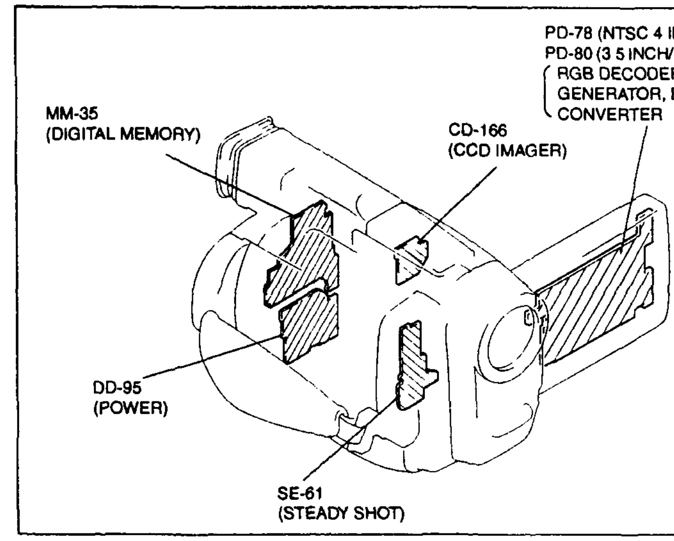
C1801	A-11
C1802	A-2
C1803	A-3
C1804	B-13
C1805	A-3
C1806	A-12
C1807	A-3
C1808	A-3
C1809	A-4
C1810	B-4
C1811	A-3
C1812	A-3
C1813	A-3
C1814	B-12
C1815	A-2
C1816	A-4
C1817	A-2
C1818	A-2
C1819	B-4
C1820	A-4
C1821	B-2
C1822	B-4
C1823	A-11
C1824	B-3
C1825	A-14
C1826	B-4
C1827	B-4
C1828	A-14
C1829	B-4
C1830	B-2
C1831	B-11
C1832	B-4
C1833	B-2
C1834	B-13
C1835	B-13
C1836	B-13
C1837	B-2
C1838	B-2
C1839	C-4
C1840	C-4
C1841	B-2
C1842	B-3
C1843	B-12
C1844	A-4
C1845	A-2
C1846	A-13
C1901	D-4
C1902	D-3
C1903	D-3
C1904	C-3
C1905	C-12
C1906	C-12
C1907	C-14
C1908	D-13
C1909	D-13
C1910	D-12
C1911	D-12
C1912	D-3
C1913	D-3
C1914	D-3
C1915	D-2
C1916	D-12
C1917	D-12
C1918	D-2
C1919	D-3
C1951	C-5
C1952	D-11
C1953	D-10
C1954	D-11
C1955	D-11
C1956	D-5
C1957	D-4
C1958	D-5
C1959	B-4
C1960	C-5
C1961	D-5
C1962	D-6
C1963	D-4
C1964	C-5
C1965	D-10
C1966	C-5
C1967	C-11
C1968	B-6
C1969	B-6
C1970	C-4
C1971	C-4
C1972	D-4
C1973	A-5
C1974	B-5
C1975	A-5
C1976	D-10
C1977	D-6
C1978	A-5
C1979	D-6
CN1801	A-13
CN1802	C-13
CN1901	A-8
CN1902	D-13
CN1951	D-10
CN1991	A-10
D1801	B-11
D1901	C-12
D1902	D-14
D1903	D-3
D1951	C-4
D1952	C-4
D1953	D-10
D1954	D-10
IC1801	B-3
IC1802	B-14
IC1803	A-12
IC1804	A-11
IC1805	C-3
IC1901	D-13
IC1902	D-3
IC1951	D-5
IC1991	A-9
L1801	A-2
L1802	B-13
L1803	C-4
L1804	A-11
L1805	C-2
L1806	A-4
L1901	C-12
L1902	D-2
L1903	C-3
L1904	D-3
L1951	B-11
L1952	B-11
L1953	C-10
L1954	C-10
L1955	A-5
L1956	B-5
L1957	A-5
Q1801	A-12
Q1802	A-12
Q1804	B-4
Q1805	B-12
Q1806	B-12
Q1807	C-3
Q1808	B-12
Q1809	A-13
Q1810	B-13
Q1901	C-2
Q1903	C-2
Q1904	C-2
Q1951	D-11
Q1952	D-4
Q1953	D-11
Q1954	D-4
Q1955	C-5
Q1956	C-5
Q1957	B-6
Q1958	D-11
Q1959	A-4
Q1960	A-4
R1802	A-12
R1803	A-12
R1804	A-13
R1805	A-13
R1806	A-12
R1807	A-2
R1808	A-3
R1809	A-11
R1810	A-2
R1811	A-12
R1812	A-4
R1813	A-3
R1814	A-3
R1815	A-4
R1816	A-3
R1817	A-12
R1818	A-4
R1819	A-3
R1820	A-13
R1821	A-3
R1822	A-2
R1823	B-13
R1824	A-4
R1825	A-4
R1826	A-4
R1827	B-13
R1828	A-2
R1829	A-13
R1830	A-4
R1831	A-4
R1832	B-2
R1833	B-13
R1834	B-2
R1835	B-13
R1836	B-4
R1837	B-2
R1838	B-13
R1839	B-4
R1840	B-4
R1841	B-11
R1842	B-13
R1843	B-12
R1844	B-4
R1845	B-4
R1846	B-2
R1847	B-13
R1848	B-11
R1849	B-13
R1850	A-12
R1851	A-12
R1852	B-12
R1853	B-13
R1854	B-13
R1855	B-13
R1856	C-4
R1857	C-4
R1858	B-12
R1859	B-12
R1860	B-12
R1861	C-4
R1862	C-3
R1863	C-3
R1864	A-13
R1901	D-3
R1902	D-3
R1903	D-3
R1904	D-3
R1905	D-3
R1906	D-3
R1907	C-13
R1908	C-12
R1909	C-3
R1910	C-3
R1911	D-13
R1912	C-14
R1913	C-13
R1914	C-12
R1915	C-13
R1916	C-12
R1917	D-12
R1918	C-12
R1919	C-12
R1920	D-12
R1921	D-13
R1922	D-12
R1923	D-12
R1924	D-12
R1925	D-12
R1926	D-3
R1927	D-3
R1928	D-13
R1929	D-13
R1930	D-3
R1931	C-3
R1932	D-12
R1933	D-3
R1934	D-12
R1935	C-13
R1936	C-13
R1937	C-14
R1938	D-14
R1939	C-4
R1951	D-10
R1952	E-4
R1953	E-4
R1954	D-4
R1955	D-4
R1956	D-11
R1957	D-4
R1958	D-11
R1959	D-6
R1960	D-4
R1961	D-4
R1962	D-4
R1963	D-4
R1964	D-6
R1965	D-5
R1966	D-5
R1967	D-4
R1968	D-5
R1969	D-4
R1970	D-4
R1971	D-4
R1972	D-6
R1973	D-6
R1974	C-5
R1975	D-5
R1976	D-10
R1977	B-7
R1978	B-7
R1979	D-10
R1980	D-10
R1981	D-10
R1983	A-5
R1984	A-5
R1985	A-5
R1991	A-9
R1995	E-14
R1996	C-14
R1997	B-14
R1998	A-9
S1191	E-1
S1992	D-1
S1993	B-1
S1994	A-1
S1995	D-8
T1951	C-11
T1952	C-6
X1801	B-12

- **For Printed Wiring Boards.**
- This board is four-layer print board However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor

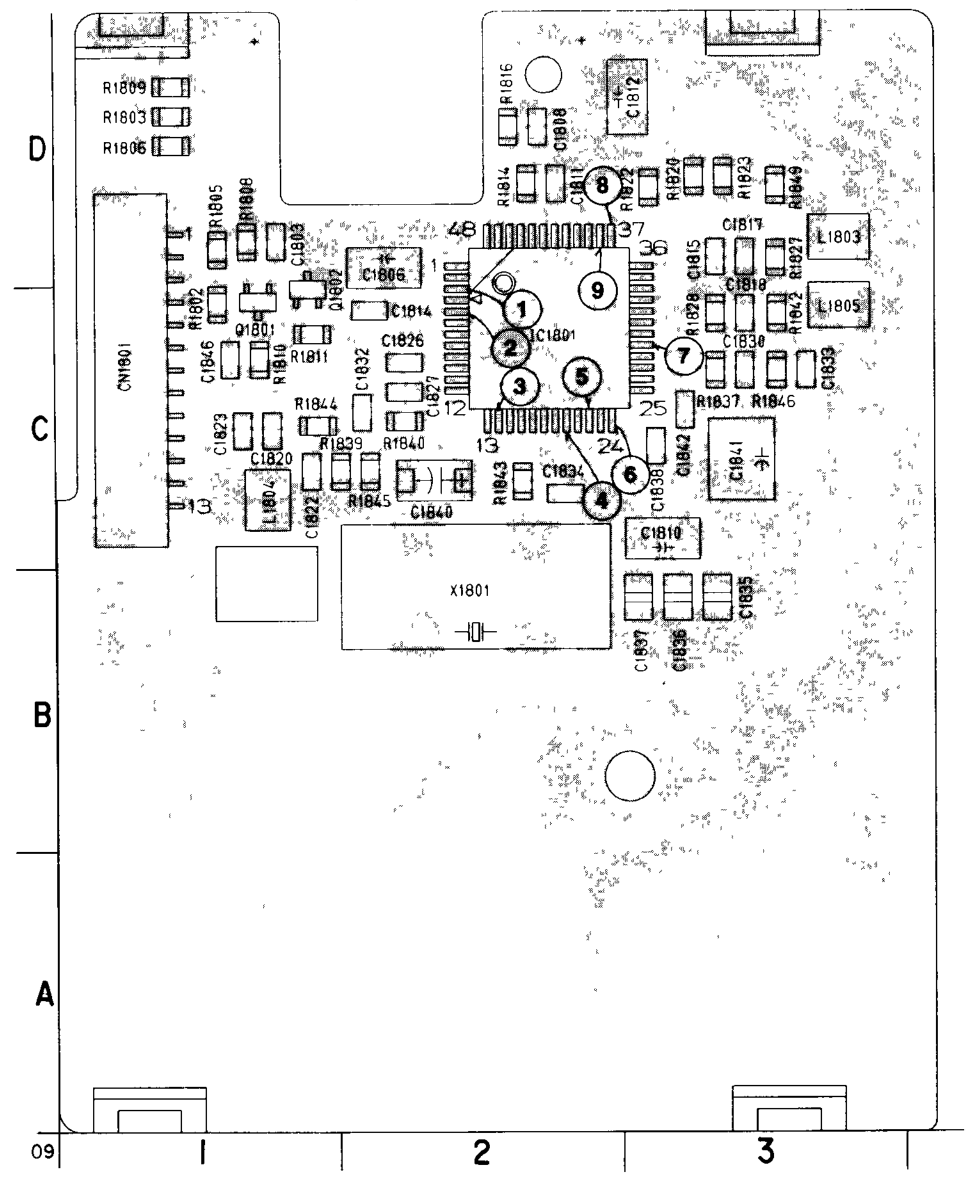



PD-78 (NTSC 4 INCH LCD MODEL)
PD-80 (3 5 INCH/PAL 4 INCH LCD MODEL)
(RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER)
MM-35 (DIGITAL MEMORY)
CD-166 (CCD IMAGER)
DD-95 (POWER)
SE-61 (STEADY SHOT)

PC-65 (RGB DECODER (2.5 INCH LCD MODEL)) PRINTED WIRING BOARD

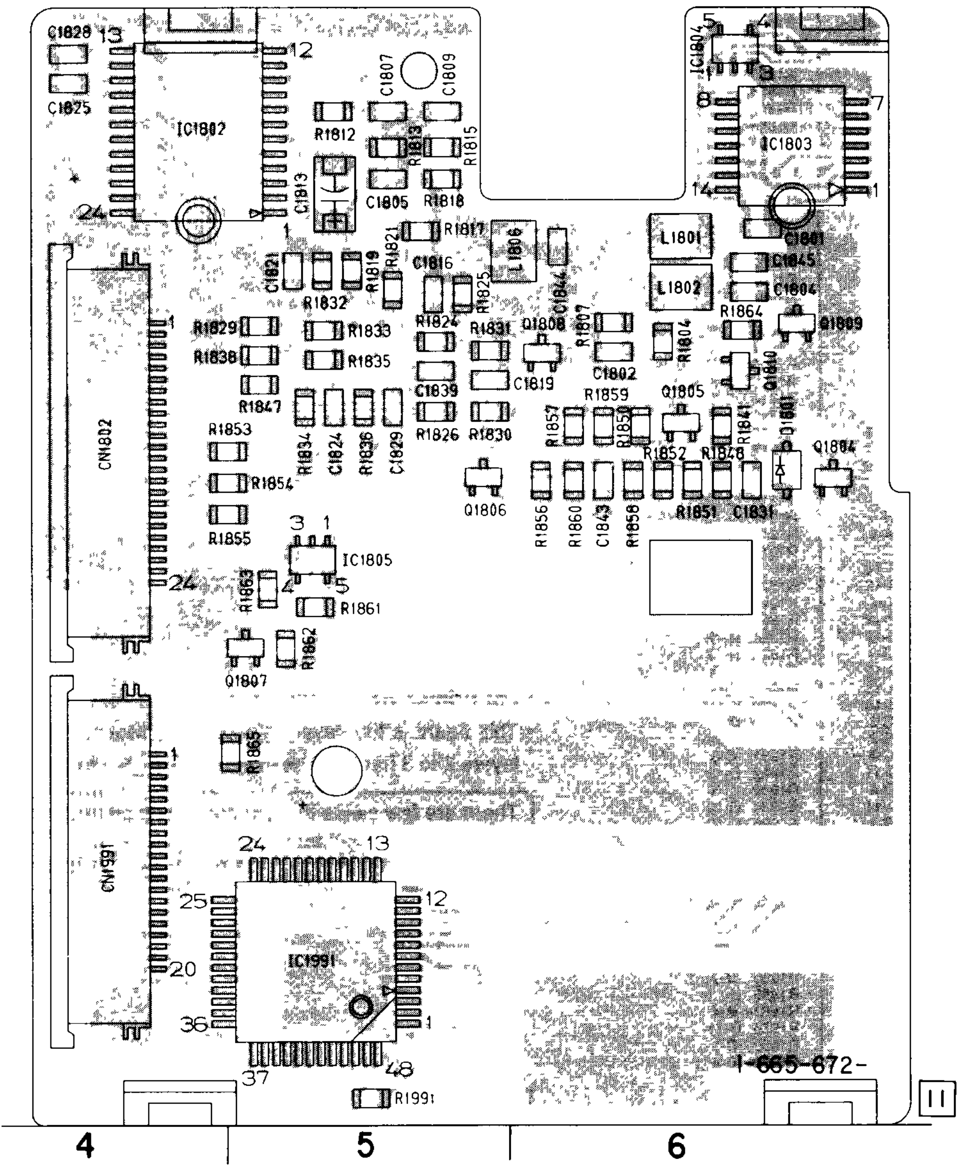
– Ref No PC-65 BOARD 40,000 series –

PC-65 BOARD (SIDE B)



D
C
B
A
09
1
2
3
CN1801
IC1801
X1801

PC-65 BOARD (SIDE A)



4
5
6
CN1802
CN1991
IC1802
IC1803
IC1805
IC1991
1-665-672-
11

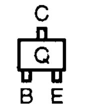
PC-65 BOARD

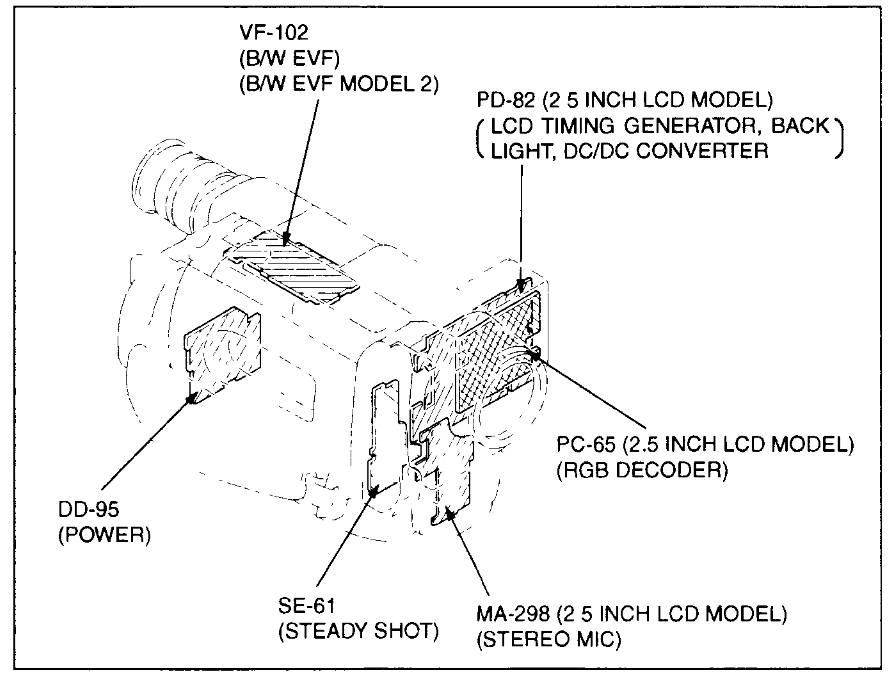
C1801	D-6
C1802	C-6
C1803	D-1
C1804	C-6
C1805	D-5
C1806	D-2
C1807	D-5
C1808	D-2
C1809	D-5
C1810	C-3
C1811	D-2
C1812	D-2
C1813	D-5
C1814	C-2
C1815	D-3
C1816	C-5
C1817	D-3
C1818	C-3
C1819	C-5
C1820	C-1
C1821	D-5
C1822	C-1
C1823	C-1
C1824	C-5
C1825	D-4
C1826	C-2
C1827	C-2
C1828	D-4
C1829	C-5
C1830	C-3
C1831	C-6
C1832	C-2
C1833	C-3
C1834	C-2
C1835	B-3
C1836	B-3
C1837	B-3
C1838	C-3
C1839	C-5
C1840	C-2
C1841	C-3
C1842	C-3
C1843	C-6
C1844	D-6
C1845	D-6
C1846	C-1
CN1801	C-1
CN1802	C-4
CN1991	A-4
D1801	C-6
IC1801	C-2
IC1802	D-4
IC1803	D-6
IC1804	D-6
IC1805	B-5
IC1991	A-5
L1801	D-6
L1802	C-6
L1803	D-3
L1804	C-1
L1805	C-3
L1806	D-5
Q1801	C-1
Q1802	C-1
Q1804	C-6
Q1805	C-6
Q1806	C-5
Q1807	B-5
Q1808	C-6
Q1809	C-6
Q1810	C-6
R1802	C-1
R1803	D-1
R1804	C-6
R1805	D-1
R1806	D-1
R1807	C-6
R1808	D-1
R1809	D-1
R1810	C-1
R1811	C-1
R1812	D-5
R1813	D-5
R1814	D-2
R1815	D-5
R1816	D-2
R1817	D-5
R1818	D-5
R1819	D-5
R1820	D-3
R1821	C-5
R1822	D-3
R1823	D-3
R1824	C-5
R1825	C-5
R1826	C-5
R1827	D-3
R1828	C-3
R1829	C-5
R1830	C-5
R1831	C-5
R1832	D-5
R1833	C-5
R1834	C-5
R1835	C-5
R1836	C-5
R1837	C-3
R1838	C-5
R1839	C-2
R1840	C-2
R1841	C-6
R1842	C-3
R1843	C-2
R1844	C-1
R1845	C-2
R1846	C-3
R1847	C-5
R1848	C-6
R1849	D-3
R1850	C-6
R1851	C-6
R1852	C-6
R1853	C-4
R1854	C-4
R1855	C-4
R1856	C-6
R1857	C-6
R1858	C-6
R1859	C-6
R1860	C-6
R1861	B-5
R1862	B-5
R1863	B-5
R1864	C-6
R1865	B-5
R1991	A-5
X1801	B-2

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram

- Chip transistor





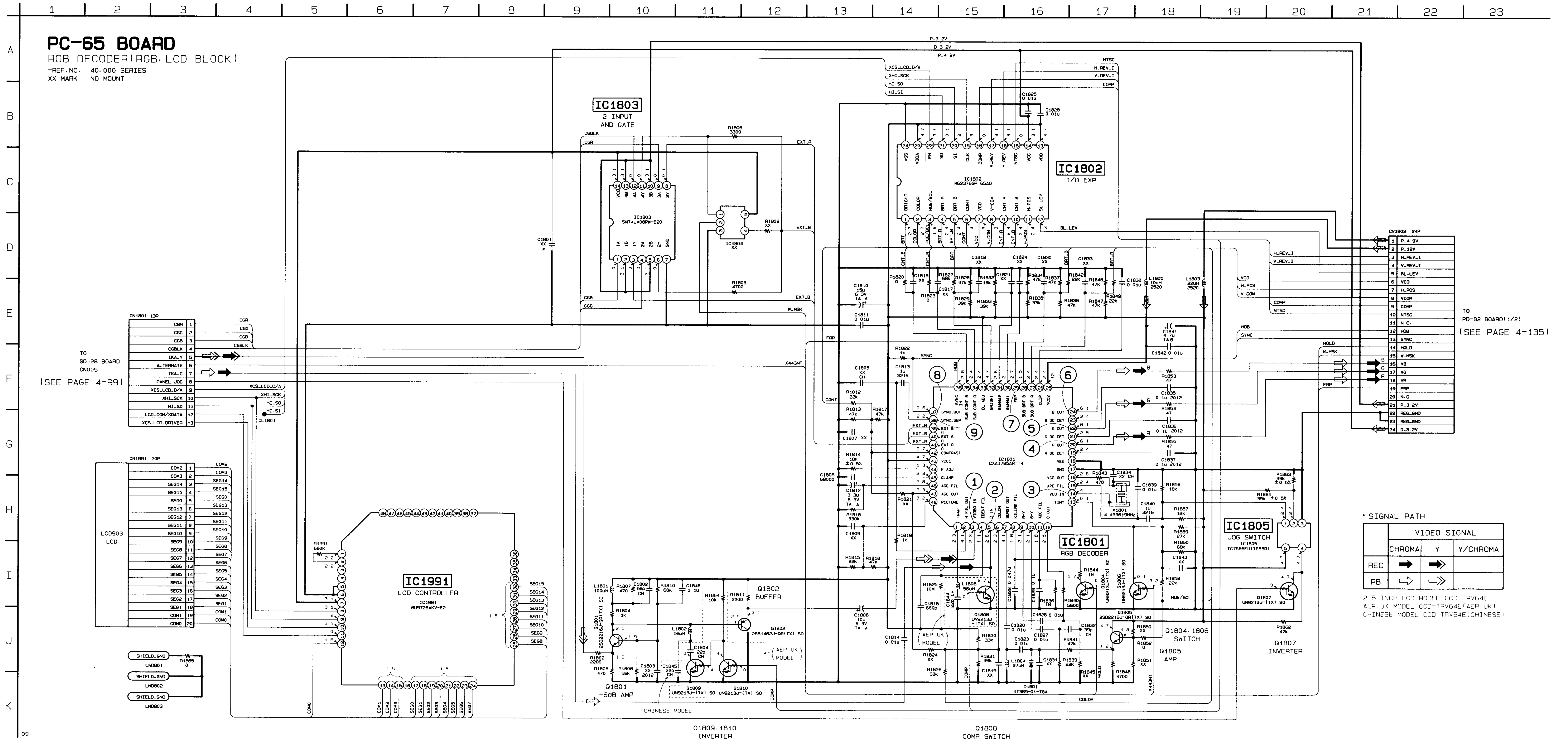
VF-102
(B/W EVF)
(B/W EVF MODEL 2)
PD-82 (2 5 INCH LCD MODEL)
(LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER)
PC-65 (2.5 INCH LCD MODEL)
(RGB DECODER)
DD-95
(POWER)
SE-61
(STEADY SHOT)
MA-298 (2 5 INCH LCD MODEL)
(STEREO MIC)

PC-65 BOARD

RGB DECODER(RGB, LCD BLOCK)

-REF. NO. 40, 000 SERIES-

XX MARK NO MOUNT



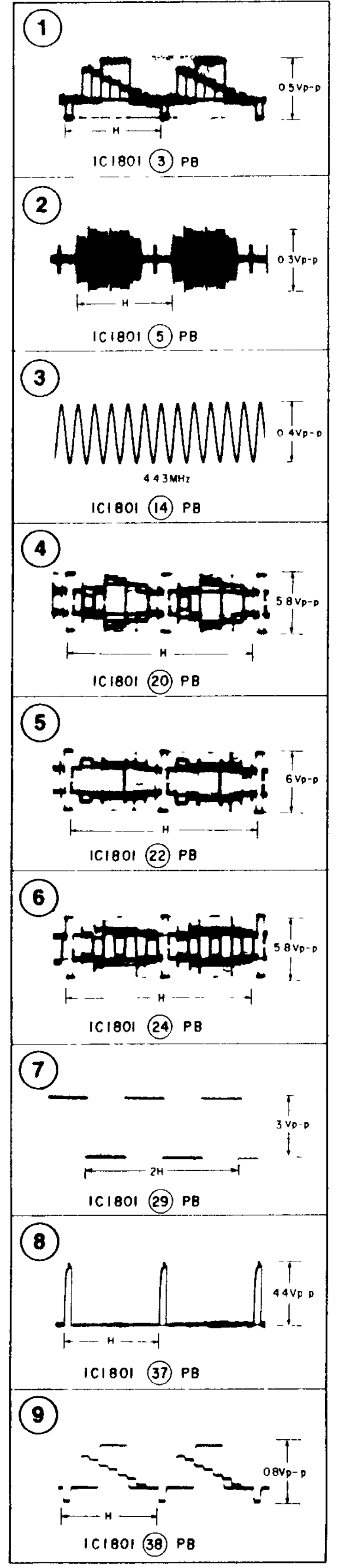
IC1803
2 INPUT AND GATE
IC1804
IC1802
I/O EXP
IC1801
RGB DECODER
IC1805
JOG SWITCH
IC1991
LCD CONTROLLER
CN1801 13P
TO SD-28 BOARD CN005
(SEE PAGE 4-99)
CN1802 24P
TO PD-82 BOARD(1/2)
(SEE PAGE 4-135)
CN1991 20P
LCD903 LCD
Q1801 -6dB AMP
Q1802 BUFFER
Q1809, 1810 INVERTER
Q1808 COMP SWITCH
Q1804-1806 SWITCH
Q1805 AMP
Q1807 INVERTER
(AEP UK MODEL)
(CHINESE MODEL)

- SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	
PB	⇨	⇨»	

2 5 INCH LCD MODEL CCD TRV64E
AEP, UK MODEL CCD-TRV64E(AEP UK)
CHINESE MODEL CCD-TRV64E(CHINESE)

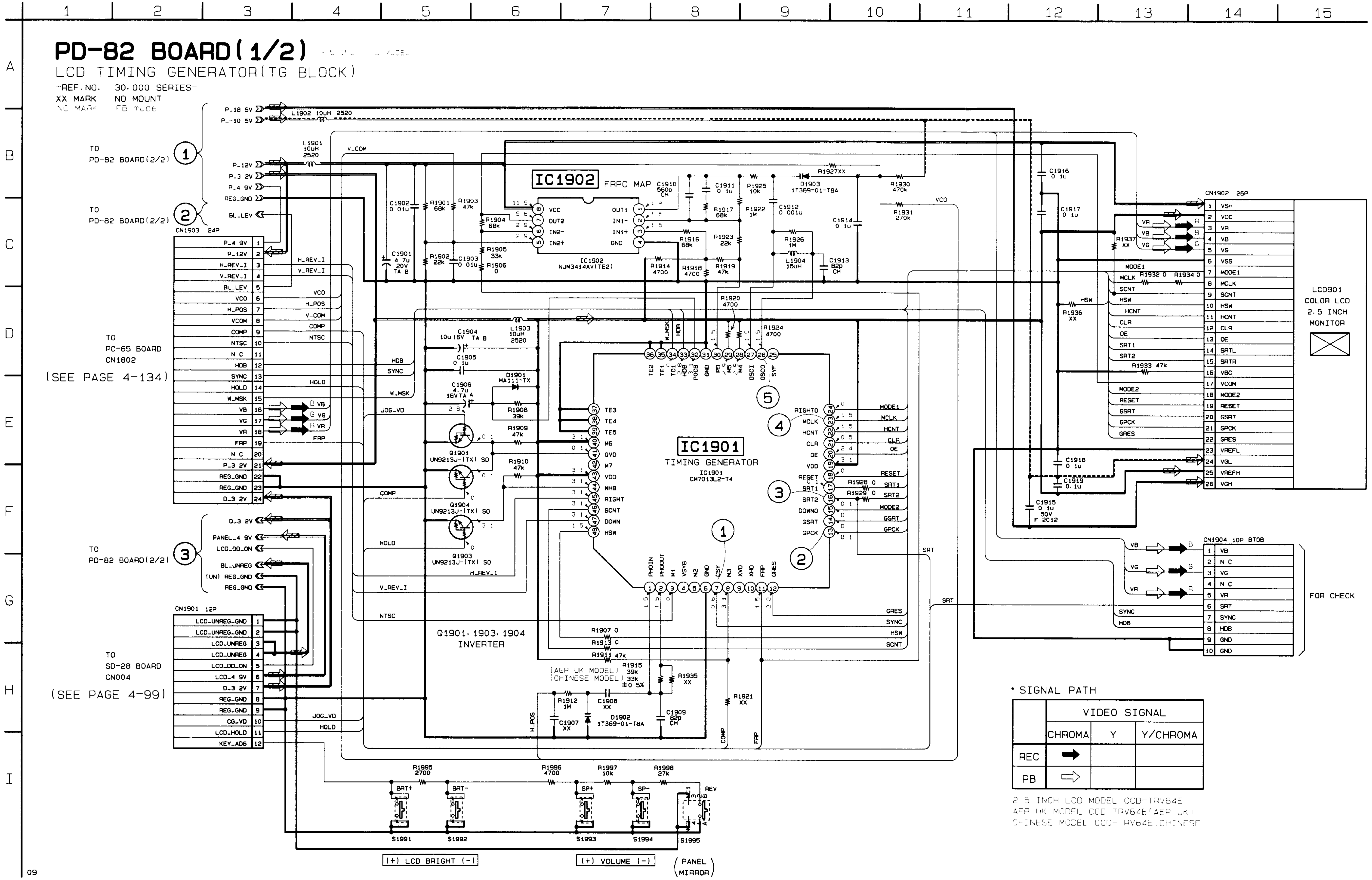
PC-65 BOARD (RGB, LCD BLOCK)



PD-82 BOARD (1/2)

LCD TIMING GENERATOR (TG BLOCK)

-REF. NO. 30,000 SERIES-
XX MARK NO MOUNT
NO MARK PB MODE


1
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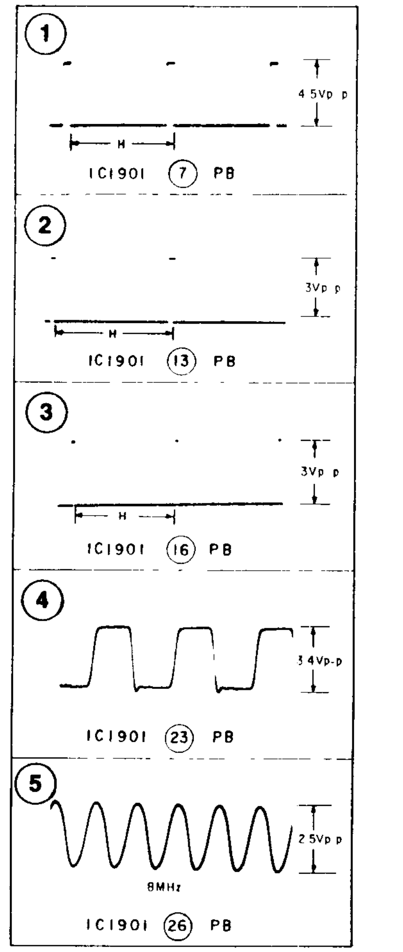
12
13
14
15
A
B
C
D
E
F
G
H
I
P_18 5V
P_-10 5V
L1902 10uH 2520
TO PD-82 BOARD(2/2) ①
L1901 10uH 2520
V_COM
P_12V
P_3 2V
P_4 9V
REG_GND
BL_LEV
TO PD-82 BOARD(2/2) ②
CN1903 24P
IC1902
FRPC MAP
VCC
OUT2
IN2-
IN2+
OUT1
IN1-
IN1+
GND
IC1902 NJM3414AV(TE2)
D1903 1T369-01-T8A
R1927XX
C1910 560p CH
C1911 0.1u
R1925 10k
C1912 0.001u
R1930 470k
R1931 270k
C1914 0.1u
R1917 68k
R1922 1M
R1923 22k
R1926 1M
L1904 15uH
C1913 82p CH
R1916 68k
R1914 4700
R1918 4700
R1919 47k
R1920 4700
R1924 4700
C1902 0.01u
R1901 68k
R1903 47k
R1904 68k
R1905 33k
R1906 0
C1901 4.7u 20V TA B
R1902 22k
C1903 0.01u
C1904 10u 16V TA B
L1903 10uH 2520
C1905 0.1u
D1901 MA111-TX
C1906 4.7u 16V TA A
R1908 39k
R1909 47k
R1910 47k
Q1901 UN9213J-(TX) SO
Q1904 UN9213J-(TX) SO
Q1903 UN9213J-(TX) SO
Q1901, 1903, 1904 INVERTER
IC1901
TIMING GENERATOR
IC1901 CM7013L2-T4
TE3
TE4
TE5
M6
GVD
M7
VDD
WHB
RIGHT
SCNT
DOWN
HSW
RIGHTO
MCLK
HCNT
CLR
OE
VDD
RESET
SAT1
SAT2
DOWNO
GSAT
GPCK
PHOIN
PHOOUT
M1
VSYB
M2
GND
VSS
XVO
XVI
FRP
GRES
TE2
TE1
TO
HD
PROG
GND
M4
OSCO
OSCI
SYF
R1928 0
R1929 0
R1907 0
R1913 0
R1911 47k
R1915 39k 33k ±0.5%
(AEP, UK MODEL)
(CHINESE MODEL)
R1935 XX
R1912 1M
C1908 XX
C1907 XX
D1902 1T369-01-T8A
C1909 82p CH
R1921 XX
H_POS
COMP
FRP
C1916 0.1u
C1917 0.1u
C1918 0.1u
C1919 0.1u
C1915 0.1u 50V F 2012
R1937 XX
R1932 0
R1934 0
R1936 XX
R1933 47k
CN1902 26P
VSH
VDD
VR
VB
VG
VSS
MODE1
MCLK
SCNT
HSW
HCNT
CLR
OE
SATL
SATR
VBC
VCOM
MODE2
RESET
GSAT
GPCK
GRES
VREFL
VGL
VREFH
VGH
LCD901 COLOR LCD 2.5 INCH MONITOR
CN1904 10P BTOB
VB
N.C
VG
N.C
VR
SAT
SYNC
HDB
GND
GND
FOR CHECK
P_4 9V
P_12V
H_REV_I
V_REV_I
BL_LEV
VCO
H_POS
VCOM
COMP
NTSC
N.C
HDB
SYNC
HOLD
W_MSK
VB
VG
VR
FRP
N.C
P_3 2V
REG_GND
REG_GND
D_3 2V
TO PC-65 BOARD CN1802
(SEE PAGE 4-134)
D_3 2V
PANEL_4 9V
LCD_DD_ON
BL_UNREG
(UN) REG_GND
REG_GND
TO PD-82 BOARD(2/2) ③
CN1901 12P
LCD_UNREG_GND
LCD_UNREG_GND
LCD_UNREG
LCD_UNREG
LCD_DD_ON
LCD_4 9V
D_3 2V
REG_GND
REG_GND
CG_VD
LCD_HOLD
KEY_AD6
TO SD-28 BOARD CN004
(SEE PAGE 4-99)
JOG_VD
HOLD
R1995 2700
R1996 4700
R1997 10k
R1998 27k
BAT+
BAT-
SP+
SP-
REV
S1991
S1992
S1993
S1994
S1995
(+) LCD BRIGHT (-)
(+) VOLUME (-)
(PANEL MIRROR)
09

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

2.5 INCH LCD MODEL CCD-TRV64E
AEP, UK MODEL CCD-TRV64E(AEP, UK)
CHINESE MODEL CCD-TRV64E(CHINESE)

PD-82 BOARD (TG BLOCK)



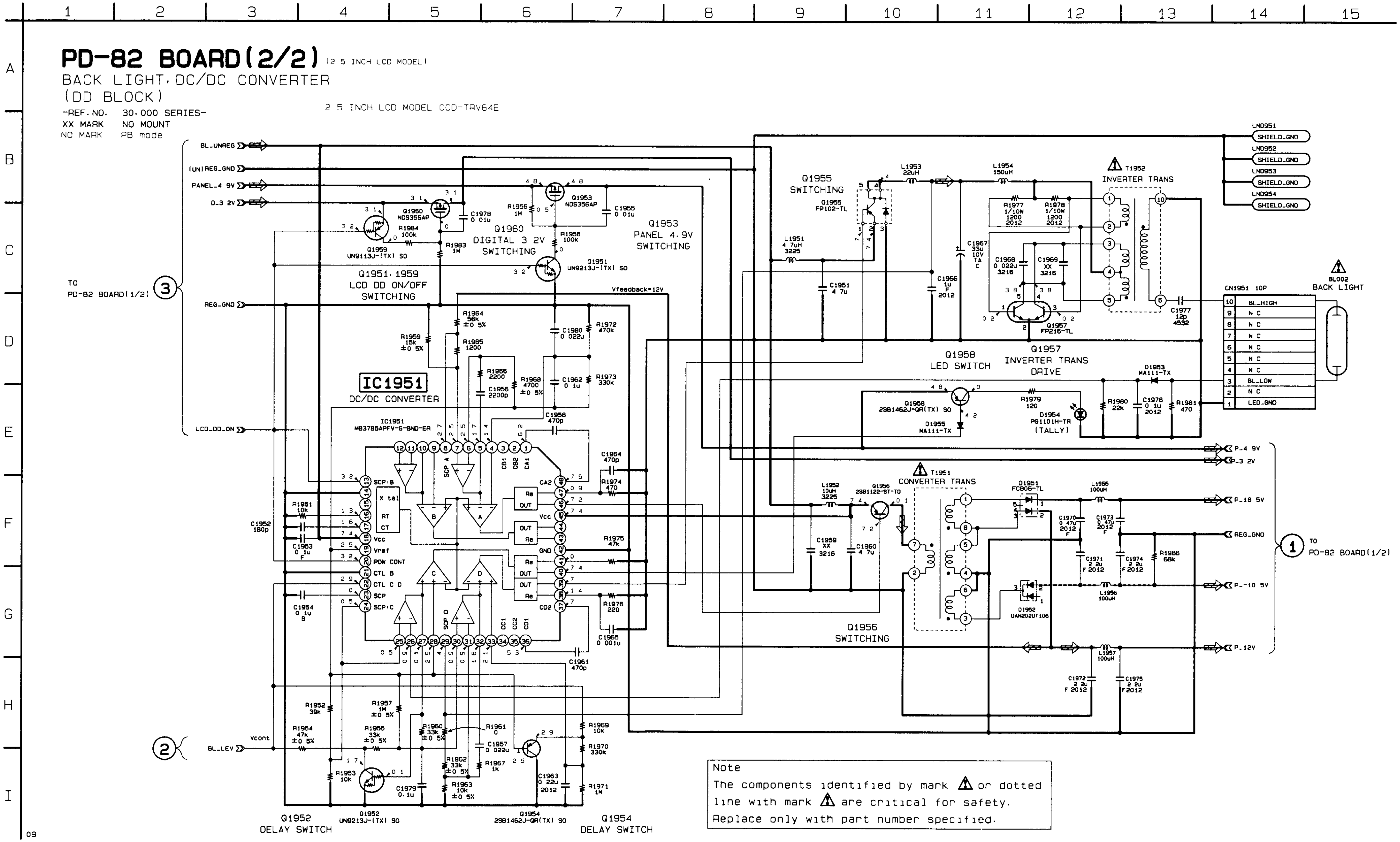
LCD TIMING GENERATOR
PD-82 (1/2) (2.5 INCH LCD MODEL)

PD-82 BOARD (2/2) (2.5 INCH LCD MODEL)

BACK LIGHT, DC/DC CONVERTER
(DD BLOCK)

-REF. NO. 30,000 SERIES-
XX MARK NO MOUNT
NO MARK PB mode

2.5 INCH LCD MODEL CCD-TRV64E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C
D
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F
G
H
I
BL_UNREG
(UN)REG_GND
PANEL_4.9V
D_3.2V
REG_GND
LCD_DD_ON
TO PD-82 BOARD(1/2)
③
②
BL_LEV
Vcont
Q1959 UN9113J-(TX) SO
Q1960 NDS356AP
R1984 100k
C1978 0.01u
R1983 1M
Q1960 DIGITAL 3.2V SWITCHING
R1956 1M
Q1953 NDS356AP
C1955 0.01u
R1958 100k
Q1953 PANEL 4.9V SWITCHING
Q1951 UN9213J-(TX) SO
Q1951, 1959 LCD DD ON/OFF SWITCHING
Vfeedback=12V
R1964 56k ±0.5%
R1959 15k ±0.5%
R1965 1200
C1980 0.022u
R1972 470k
R1966 2200
C1956 2200p
R1968 4700 ±0.5%
C1962 0.1u
R1973 330k
C1958 470p
IC1951
DC/DC CONVERTER
IC1951 M63785APFV-G-BND-ER
SCP B
X tal
RT
CT
Vcc
Vref
POW CONT
CTL B
CTL C D
SCP
SCP C
CB1
CB2
CA1
CA2
Re
OUT
GND
CO2
SCP A
SCP D
CC1
CC2
CD1
R1951 10k
C1952 180p
C1953 0.1u
C1954 0.1u
C1964 470p
R1974 470
R1975 47k
R1976 220
C1965 0.001u
C1961 470p
R1952 39k
R1957 1M ±0.5%
R1954 47k ±0.5%
R1955 33k ±0.5%
R1960 33k ±0.5%
R1961 0
C1957 0.022u
R1962 33k ±0.5%
R1967 1k
R1963 10k ±0.5%
R1953 10k
C1979 0.1u
C1963 0.22u 2012
R1969 10k
R1970 330k
R1971 1M
Q1952 UN9213J-(TX) SO
Q1952 DELAY SWITCH
Q1954 2SB1462J-QR(TX) SO
Q1954 DELAY SWITCH
Q1955 SWITCHING
Q1955 FP102-TL
L1951 4.7uH 3225
C1951 4.7u
L1953 22uH
L1954 150uH
C1967 33u 10V TA C
C1966 1u F 2012
R1977 1/10W 1200 2012
R1978 1/10W 1200 2012
C1968 0.022u 3216
C1969 XX 3216
Q1957 FP216-TL
Q1957 INVERTER TRANS DRIVE
Q1958 LED SWITCH
T1952 INVERTER TRANS
C1977 12p 4532
LND951
LND952
LND953
LND954
SHIELD_GND
BL002 BACK LIGHT
CN1951 10P
BL_HIGH
N C
BL_LOW
LED_GND
D1953 MA111-TX
Q1958 2SB1462J-QR(TX) SO
D1955 MA111-TX
R1979 120
D1954 PG1101H-TR (TALLY)
R1980 22k
C1976 0.1u 2012
R1981 470
P-4.9V
P-3.2V
P-18.5V
REG_GND
P--10.5V
P-12V
TO PD-82 BOARD(1/2)
①
T1951 CONVERTER TRANS
L1952 10uH 3225
Q1956 2SB1122-ST-TD
C1959 XX 3216
C1960 4.7u
Q1956 SWITCHING
D1951 FC806-TL
L1955 100uH
C1970 0.47u 2012 F
C1973 0.47u 2012 F
C1971 2.2u F 2012
C1974 2.2u F 2012
R1986 68k
L1956 100uH
D1952 DAN202UT106
L1957 100uH
C1972 2.2u F 2012
C1975 2.2u F 2012
09

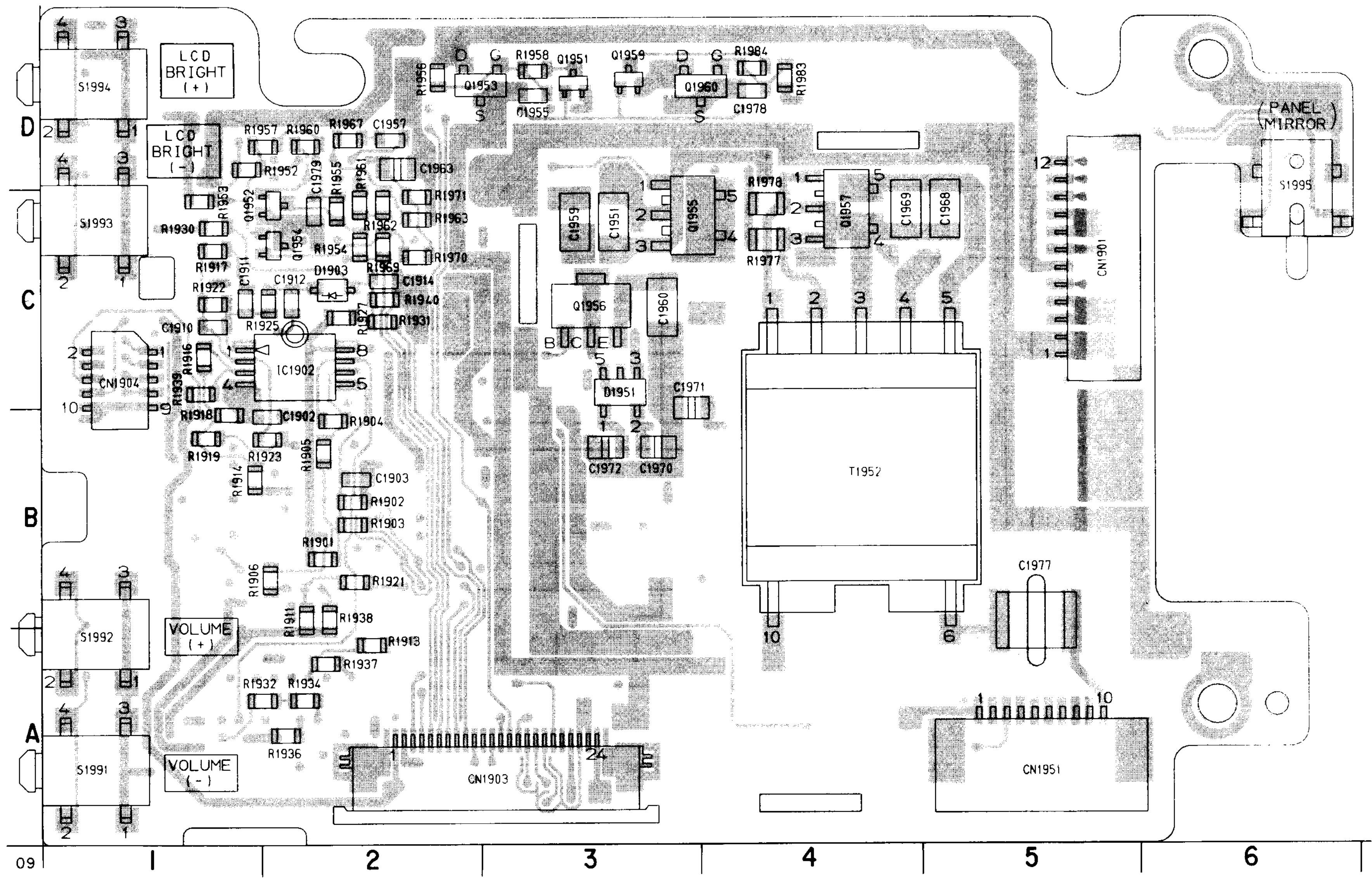
Note
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

BACK LIGHT, DC/DC CONVERTER
PD-82 (2/2) (2.5 INCH LCD MODEL)

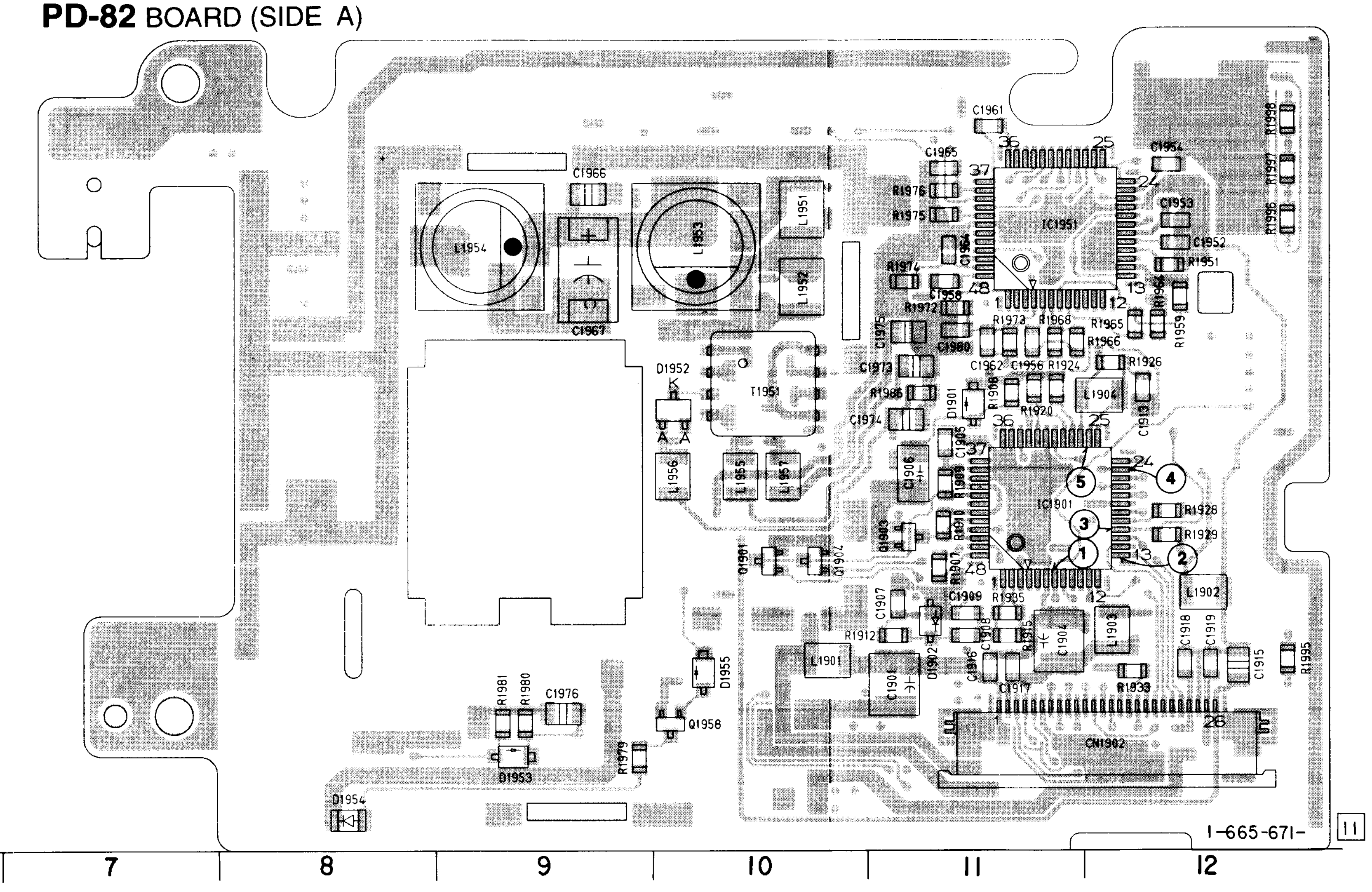
PD-82 (LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER) (2.5 INCH LCD MODEL) PRINTED WIRING BOARD

– Ref No. PD-82 BOARD: 30,000 series –

PD-82 BOARD (SIDE B)


S1994
LCD BRIGHT (+)
LCD BRIGHT (-)
S1993
S1992
VOLUME (+)
S1991
VOLUME (-)
IC1902
CN1904
Q1953
Q1960
Q1956
Q1955
Q1957
D1951
T1952
C1977
CN1901
CN1903
CN1951
D
C
B
A
09
1
2
3
4
5
6

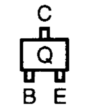
PD-82 BOARD (SIDE A)

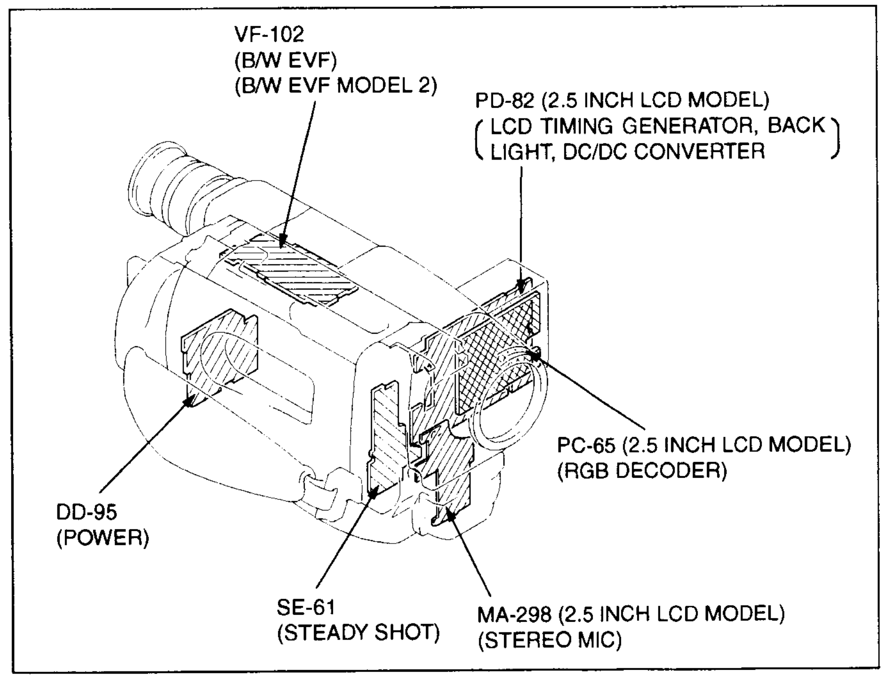

PANEL MIRROR
S1995
L1954
L1953
L1951
L1952
IC1951
T1951
IC1901
L1901
L1902
L1903
L1904
CN1902
L1955
L1956
L1957
D1952
D1953
D1954
D1955
Q1958
1-665-671-
11
7
8
9
10
11
12

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor



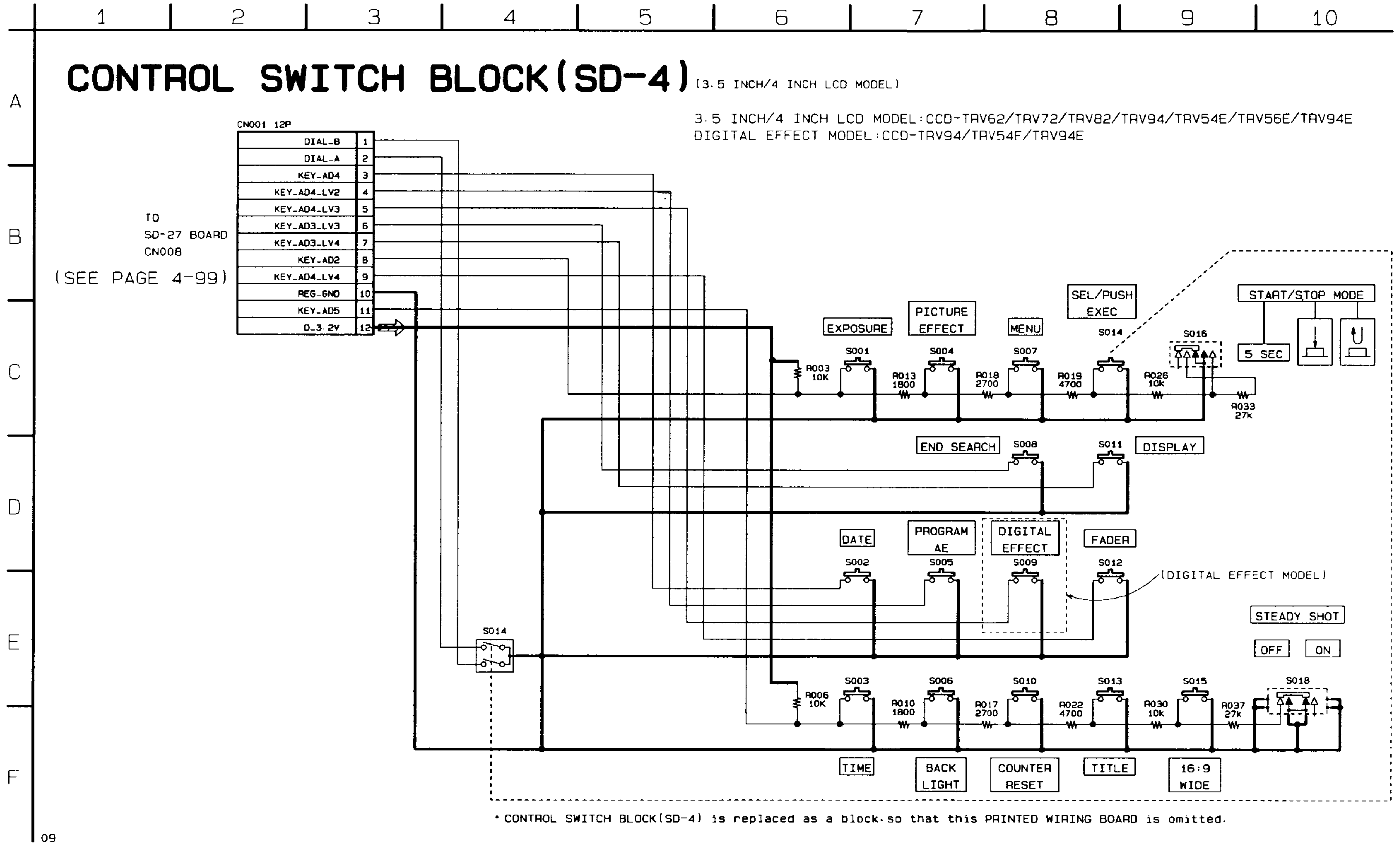

VF-102
(B/W EVF)
(B/W EVF MODEL 2)
PD-82 (2.5 INCH LCD MODEL)
(LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER)
PC-65 (2.5 INCH LCD MODEL)
(RGB DECODER)
DD-95
(POWER)
SE-61
(STEADY SHOT)
MA-298 (2.5 INCH LCD MODEL)
(STEREO MIC)

PD-82 BOARD

C1901	A-11
C1902	B-2
C1903	B-2
C1904	A-11
C1905	B-11
C1906	B-11
C1907	B-11
C1908	B-11
C1909	B-11
C1910	C-1
C1911	C-1
C1912	C-2
C1913	C-12
C1914	C-2
C1915	A-12
C1916	A-11
C1917	A-11
C1918	A-12
C1919	A-12
C1951	C-3
C1952	C-12
C1953	C-12
C1954	D-12
C1955	D-3
C1956	C-11
C1957	D-2
C1958	C-11
C1959	C-3
C1960	C-3
C1961	D-11
C1962	C-11
C1963	D-2
C1964	C-11
C1965	D-11
C1966	C-11
C1966	D-9
C1967	C-9
C1968	C-5
C1969	C-4
C1970	B-3
C1971	B-3
C1972	B-3
C1973	C-11
C1974	C-11
C1975	C-11
C1976	A-9
C1977	B-5
C1978	D-4
C1979	C-2
C1980	C-11
C1995	A-12
CN1901	C-5
CN1902	A-11
CN1903	A-2
CN1904	C-1
CN1951	A-5
D1901	C-11
D1902	B-11
D1903	C-2
D1951	C-3
D1952	C-10
D1953	A-9
D1954	A-8
D1955	A-10
IC1901	B-11
IC1902	C-2
IC1951	C-11
L1901	A-10
L1902	B-12
L1903	B-12
L1904	C-12
L1951	C-10
L1952	C-10
L1953	C-10
L1954	C-9
L1955	B-10
L1956	B-10
L1957	B-10
Q1901	B-10
Q1903	B-11
Q1904	B-10
Q1951	D-3
Q1952	C-2
Q1953	D-2
Q1954	C-2
Q1955	C-3
Q1956	C-3
Q1957	C-4
Q1958	A-10
Q1959	D-3
Q1960	D-3
R1901	B-2
R1902	B-2
R1903	B-2
R1904	B-2
R1905	B-2
R1906	B-2
R1907	B-11
R1908	C-11
R1909	B-11
R1910	B-11
R1911	B-2
R1912	B-11
R1913	A-2
R1914	B-1
R1915	B-11
R1916	C-1
R1917	C-1
R1918	B-1
R1919	B-1
R1920	C-11
R1921	B-2
R1922	C-1
R1923	B-2
R1924	C-11
R1925	C-2
R1926	C-12
R1927	C-2
R1928	B-12
R1929	B-12
R1930	C-1
R1931	C-2
R1932	A-2
R1933	A-12
R1934	A-2
R1935	B-11
R1936	A-2
R1937	A-2
R1938	A-2
R1939	C-1
R1940	C-2
R1951	C-12
R1952	D-1
R1953	C-1
R1954	C-2
R1955	C-2
R1956	D-2
R1957	D-2
R1958	D-3
R1959	C-12
R1960	D-2
R1961	C-2
R1962	C-2
R1963	C-2
R1964	C-12
R1965	C-12
R1967	D-2
R1968	C-11
R1969	C-2
R1970	C-2
R1971	C-2
R1972	C-11
R1973	C-11
R1974	C-11
R1975	C-11
R1976	D-11
R1977	C-4
R1978	C-4
R1979	A-9
R1980	A-9
R1981	A-9
R1983	D-4
R1984	D-4
R1986	C-11
R1996	C-12
R1997	D-12
R1998	D-12
S1991	A-1
S1992	A-1
S1993	C-1
S1994	D-1
S1995	D-6
T1951	C-10
T1952	B-4

CONTROL SWITCH BLOCK(SD-4) (3.5 INCH/4 INCH LCD MODEL)

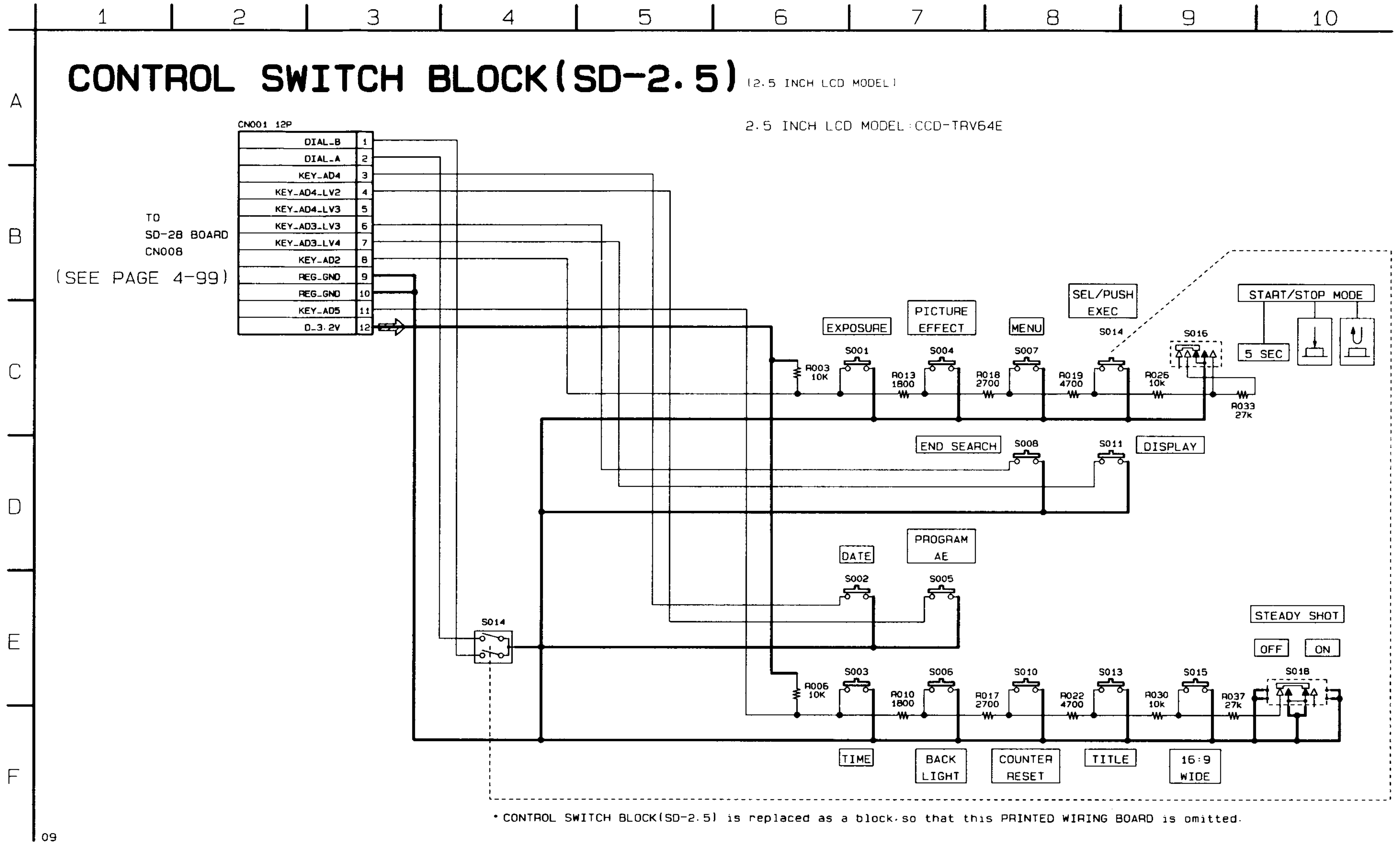
3.5 INCH/4 INCH LCD MODEL:CCD-TRV62/TRV72/TRV82/TRV94/TRV54E/TRV56E/TRV94E
DIGITAL EFFECT MODEL:CCD-TRV94/TRV54E/TRV94E


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
CN001 12P
DIAL_B 1
DIAL_A 2
KEY_AD4 3
KEY_AD4_LV2 4
KEY_AD4_LV3 5
KEY_AD3_LV3 6
KEY_AD3_LV4 7
KEY_AD2 8
KEY_AD4_LV4 9
REG_GND 10
KEY_AD5 11
D_3.2V 12
TO
SD-27 BOARD
CN008
(SEE PAGE 4-99)
EXPOSURE
PICTURE EFFECT
MENU
SEL/PUSH EXEC
START/STOP MODE
5 SEC
S001
S004
S007
S014
S016
R003 10K
R013 1800
R018 2700
R019 4700
R026 10k
R033 27k
END SEARCH
S008
S011
DISPLAY
DATE
PROGRAM AE
DIGITAL EFFECT
FADER
S002
S005
S009
S012
(DIGITAL EFFECT MODEL)
STEADY SHOT
OFF
ON
S014
S003
S006
S010
S013
S015
S018
R006 10K
R010 1800
R017 2700
R022 4700
R030 10k
R037 27k
TIME
BACK LIGHT
COUNTER RESET
TITLE
16:9 WIDE
09

* CONTROL SWITCH BLOCK(SD-4) is replaced as a block, so that this PRINTED WIRING BOARD is omitted.

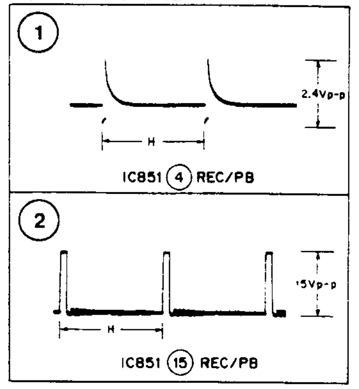
CONTROL SWITCH BLOCK(SD-2.5) (2.5 INCH LCD MODEL)

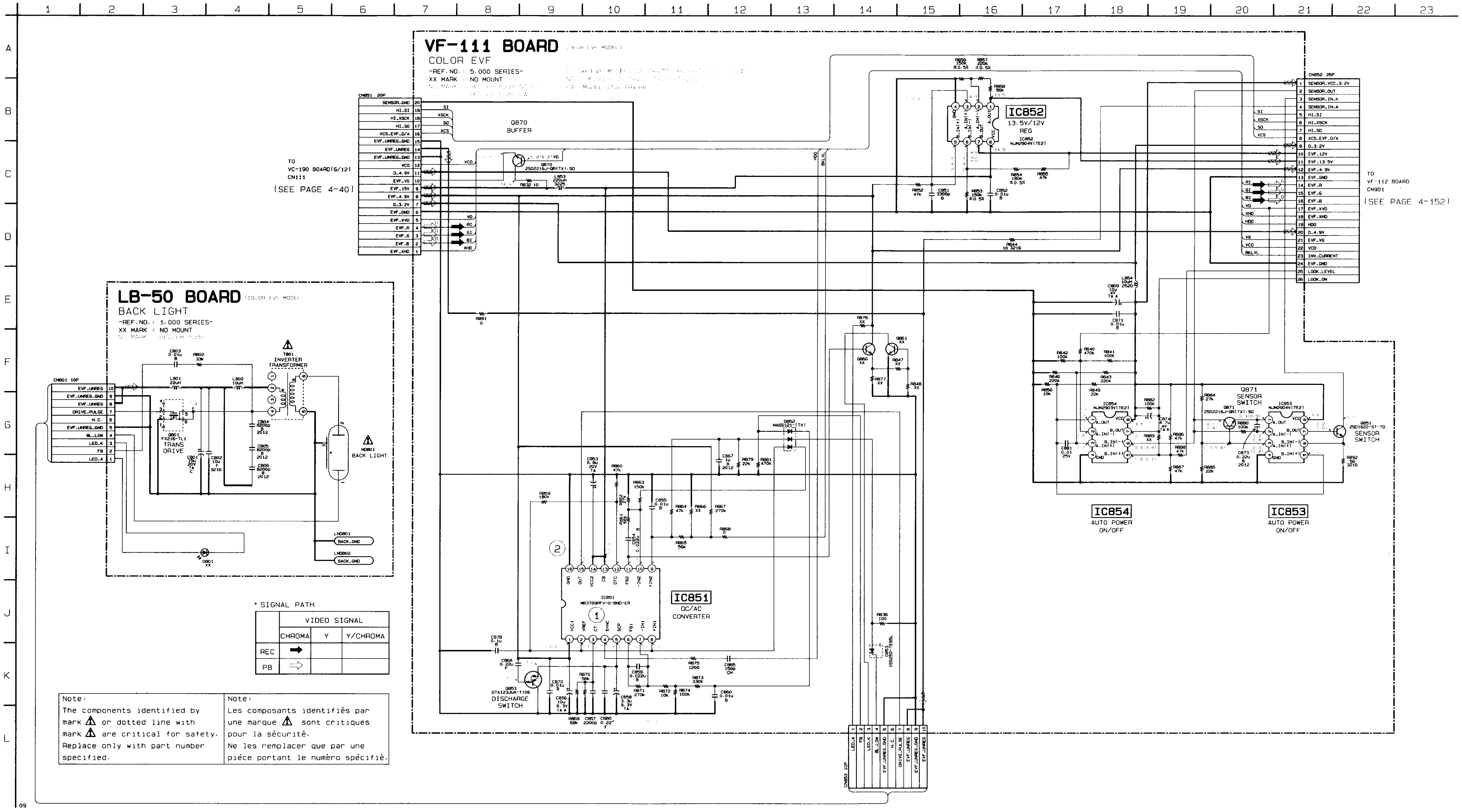
2.5 INCH LCD MODEL:CCD-TRV64E


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
CN001 12P
DIAL_B 1
DIAL_A 2
KEY_AD4 3
KEY_AD4_LV2 4
KEY_AD4_LV3 5
KEY_AD3_LV3 6
KEY_AD3_LV4 7
KEY_AD2 8
REG_GND 9
REG_GND 10
KEY_AD5 11
D_3.2V 12
TO
SD-28 BOARD
CN008
(SEE PAGE 4-99)
EXPOSURE
PICTURE EFFECT
MENU
SEL/PUSH EXEC
START/STOP MODE
5 SEC
S001
S004
S007
S014
S016
R003 10K
R013 1800
R018 2700
R019 4700
R026 10k
R033 27k
END SEARCH
S008
S011
DISPLAY
DATE
PROGRAM AE
S002
S005
STEADY SHOT
OFF
ON
S014
S003
S006
S010
S013
S015
S018
R006 10K
R010 1800
R017 2700
R022 4700
R030 10k
R037 27k
TIME
BACK LIGHT
COUNTER RESET
TITLE
16:9 WIDE
09

* CONTROL SWITCH BLOCK(SD-2.5) is replaced as a block, so that this PRINTED WIRING BOARD is omitted.

VF-111 BOARD




VF-111 BOARD
COLOR EVF
-REF.NO.: 5,000 SERIES-
XX MARK : NO MOUNT
CN851 20P
SENSOR_GND
HI_SI
HI_XSCK
HI_SO
XCS_EVF_D/A
EVF_UNREG_GND
EVF_UNREG
EVF_UNREG_GND
VCO
D.4.9V
EVF_VG
EVF_15V
EVF_4.9V
D.3.2V
EVF_GND
EVF_XVD
EVF_R
EVF_G
EVF_B
EVF_XHD
TO
VC-190 BOARD(6/12)
CN111
(SEE PAGE 4-40)
Q870
BUFFER
IC852
13.5V/12V
REG
IC852
NJM2904V(TE2)
CN852 26P
SENSOR_VCC_3.2V
SENSOR_OUT
SENSOR_IN_K
SENSOR_IN_A
HI_SI
HI_XSCK
HI_SO
XCS_EVF_D/A
D.3.2V
EVF_12V
EVF_13.5V
EVF_4.9V
EVF_GND
EVF_R
EVF_G
EVF_B
EVF_XVD
EVF_XHD
HDO
D.4.9V
EVF_VG
VCO
INV_CURRENT
EVF_GND
LOOK_LEVEL
LOOK_ON
TO
VF-112 BOARD
CN901
(SEE PAGE 4-152)
LB-50 BOARD
BACK LIGHT
-REF.NO.: 1,000 SERIES-
XX MARK : NO MOUNT
CN801 10P
EVF_UNREG
EVF_UNREG_GND
EVF_UNREG
DRIVE_PULSE
N.C.
EVF_UNREG_GND
BL_LOW
LED_K
FB
LED_A
T801
INVERTER
TRANSFORMER
Q801
FX216-TL1
TRANS
DRIVE
ND801
BACK LIGHT
LND801
BACK_GND
LND802
BACK_GND
D801
XX
IC851
MB3789PFV-G-BND-ER
IC851
DC/AC
CONVERTER
Q853
DTA123JUA-T106
DISCHARGE
SWITCH
D852
MA8S121-(TX)
Q860
Q861
Q871
SENSOR
SWITCH
IC854
NJM2903V(TE2)
IC853
NJM2904V(TE2)
Q851
2SD1622-ST-TD
SENSOR
SWITCH
IC854
AUTO POWER
ON/OFF
IC853
AUTO POWER
ON/OFF
CN853 10P
LED_A
FB
LED_K
BL_LOW
EVF_UNREG_GND
N.C.
DRIVE_PULSE
EVF_UNREG
EVF_UNREG_GND
EVF_UNREG

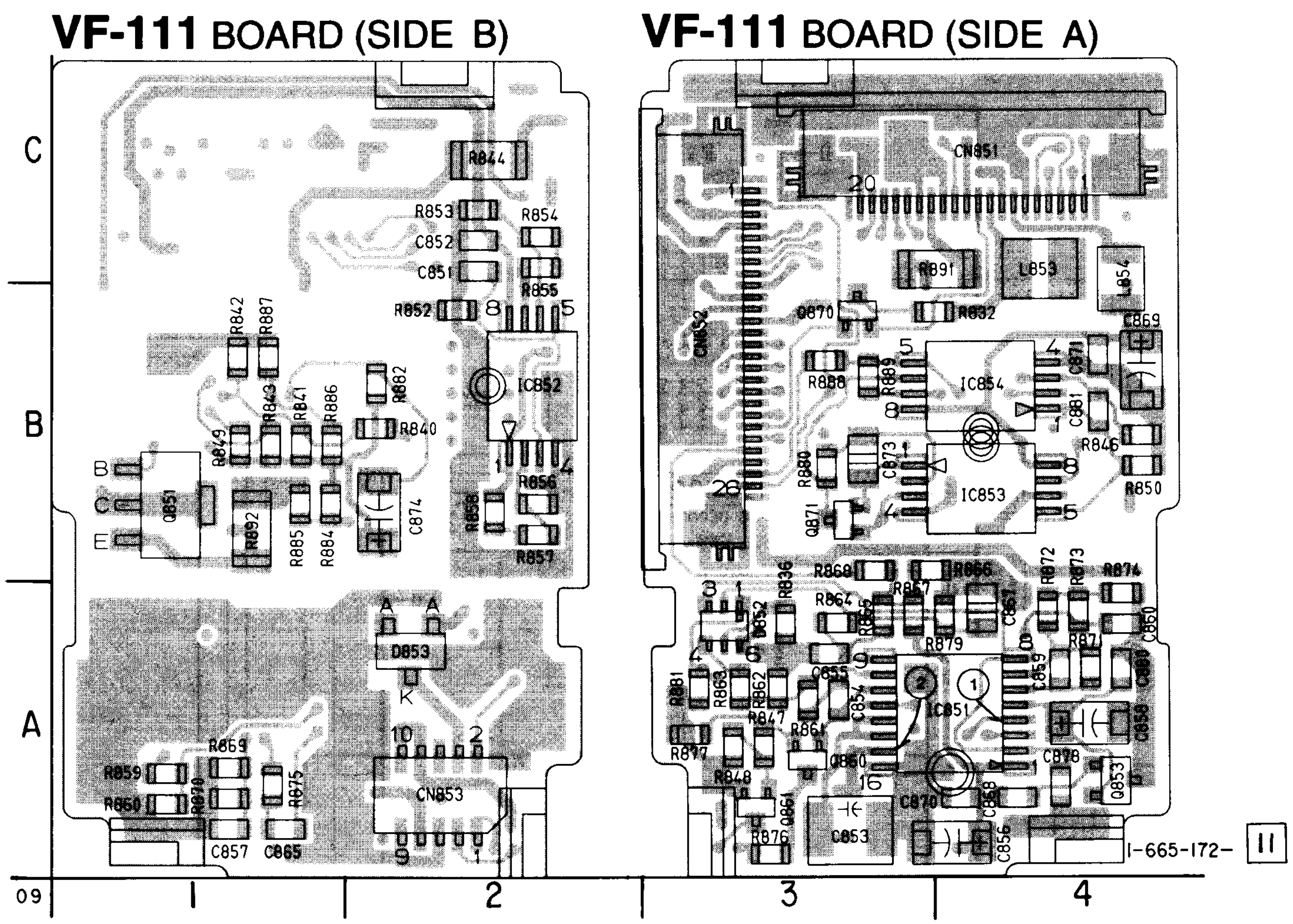
• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

VF-111 (COLOR EVF (COLOR EVF MODEL)), LB-50 (BACK LIGHT) PRINTED WIRING BOARDS

– Ref No. VF-111 BOARD: 5,000 series, LB-50 BOARD: 1,000 series –



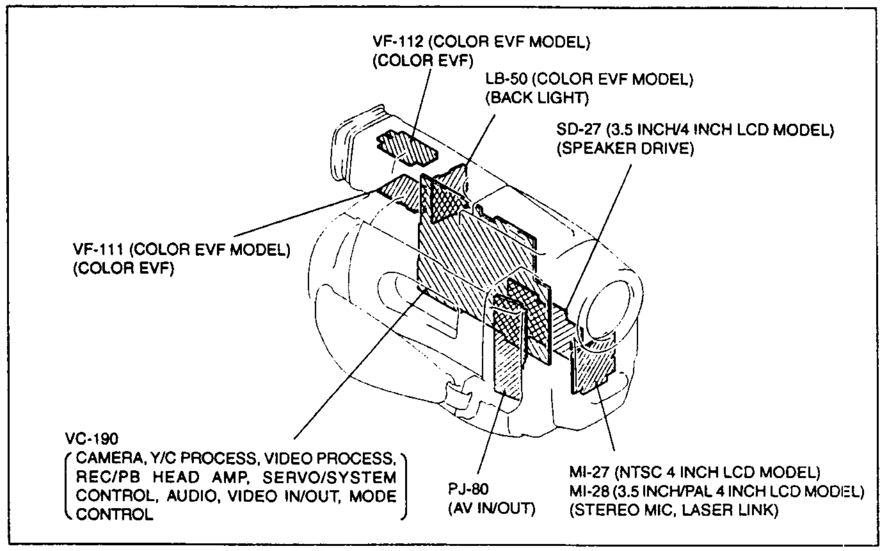
VF-111 BOARD (SIDE B)

VF-111 BOARD (SIDE A)

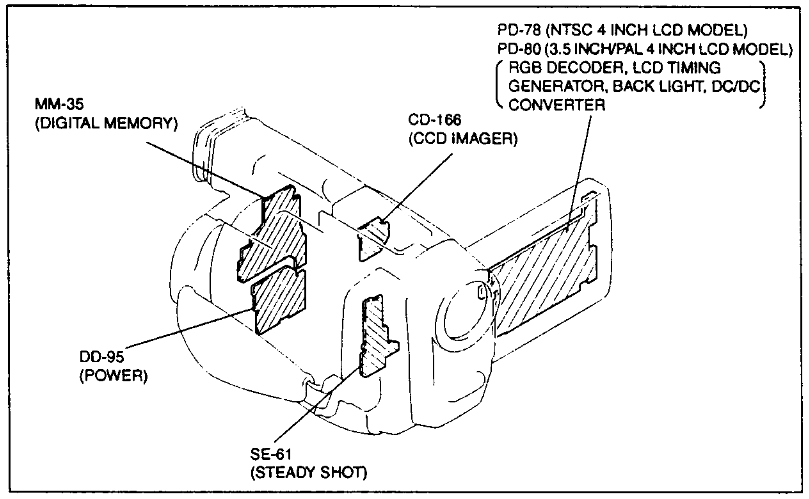
C
B
A
R844
R853
R854
C852
C851
R855
R852
8
5
IC852
1
4
R842
R887
R843
R841
R886
R882
R840
R849
R856
B
C
E
Q851
R892
R885
R884
C874
R858
R857
A
A
D853
K
R869
R859
R860
R870
R875
CN853
10
2
C857
C865
9
1
CN851
20
1
1
28
CN852
L853
L854
R891
Q870
R832
C869
R888
R889
IC854
5
4
C871
C881
R846
C873
IC853
R880
Q871
8
5
R850
R868
R867
R866
R872
R873
R874
R836
R864
D852
R865
R879
C867
C860
R881
R863
R862
R847
C855
C854
R861
IC851
R871
C859
C880
C858
R877
R848
Q860
C878
Q853
Q861
R876
C853
C870
C868
C856
16
1-665-172-
11
09
1
2
3
4

VF-111 BOARD

C851	C-2
C852	C-2
C853	A-3
C854	A-3
C855	A-3
C856	A-4
C857	A-1
C858	A-4
C859	A-4
C860	A-4
C865	A-1
C867	A-4
C868	A-4
C869	B-4
C870	A-4
C871	B-4
C873	B-3
C874	B-2
C878	A-4
C880	A-4
C881	B-4
CN851	C-4
CN852	B-3
CN853	A-2
D852	A-3
D853	A-2
IC851	A-3
IC852	B-2
IC853	B-4
IC854	B-4
L853	C-4
L854	C-4
Q851	B-1
Q853	A-4
Q860	A-3
Q861	A-3
Q870	B-3
Q871	B-3
R832	B-3
R836	A-3
R840	B-2
R841	B-1
R842	B-1
R843	B-1
R844	C-2
R846	B-4
R847	A-3
R848	A-3
R849	B-1
R850	B-4
R852	B-2
R853	C-2
R854	C-2
R855	C-2
R856	B-2
R857	B-2
R858	B-2
R859	A-1
R860	A-1
R861	A-3
R862	A-3
R863	A-3
R864	A-3
R865	A-3
R866	B-3
R867	A-3
R868	B-3
R869	A-1
R870	A-1
R871	A-4
R872	A-4
R873	A-4
R874	A-4
R875	A-1
R876	A-3
R877	A-3
R879	A-4
R880	B-3
R881	A-3
R882	B-2
R884	B-1
R885	B-1
R886	B-1
R887	B-1
R888	B-3
R889	B-3
R891	C-3
R892	B-1



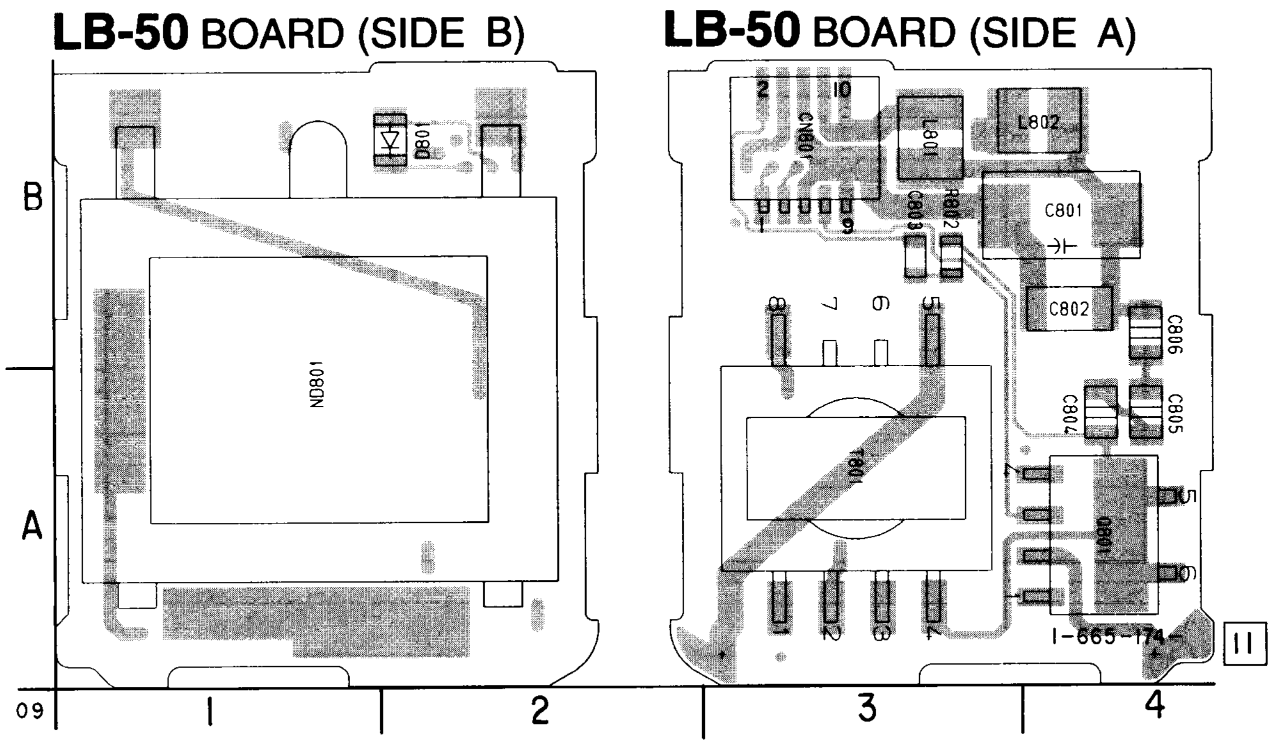
VF-112 (COLOR EVF MODEL)
(COLOR EVF)
LB-50 (COLOR EVF MODEL)
(BACK LIGHT)
SD-27 (3.5 INCH/4 INCH LCD MODEL)
(SPEAKER DRIVE)
VF-111 (COLOR EVF MODEL)
(COLOR EVF)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
PJ-80
(AV IN/OUT)
MI-27 (NTSC 4 INCH LCD MODEL)
MI-28 (3.5 INCH/PAL 4 INCH LCD MODEL)
(STEREO MIC, LASER LINK)



PD-78 (NTSC 4 INCH LCD MODEL)
PD-80 (3.5 INCH/PAL 4 INCH LCD MODEL)
RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER
MM-35
(DIGITAL MEMORY)
CD-166
(CCD IMAGER)
DD-95
(POWER)
SE-61
(STEADY SHOT)

LB-50 (BACK LIGHT) PRINTED WIRING BOARD

– Ref No. LB-50 BOARD: 1,000 series –



LB-50 BOARD (SIDE B)

LB-50 BOARD (SIDE A)

B
A
D801
ND801
2
10
CN801
1
9
L801
L802
C803
R802
C801
C802
C806
C804
C805
8
7
6
5
T801
1
2
3
4
Q801
5
10
1-665-174-
11
09
1
2
3
4

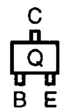
LB-50 BOARD

C801	B-4
C802	B-4
C803	B-3
C804	A-4
C805	A-4
C806	B-4
CN801	B-3
D801	B-2
L801	B-3
L802	B-4
ND801	A-1
Q801	A-4
R802	B-3
T801	A-3

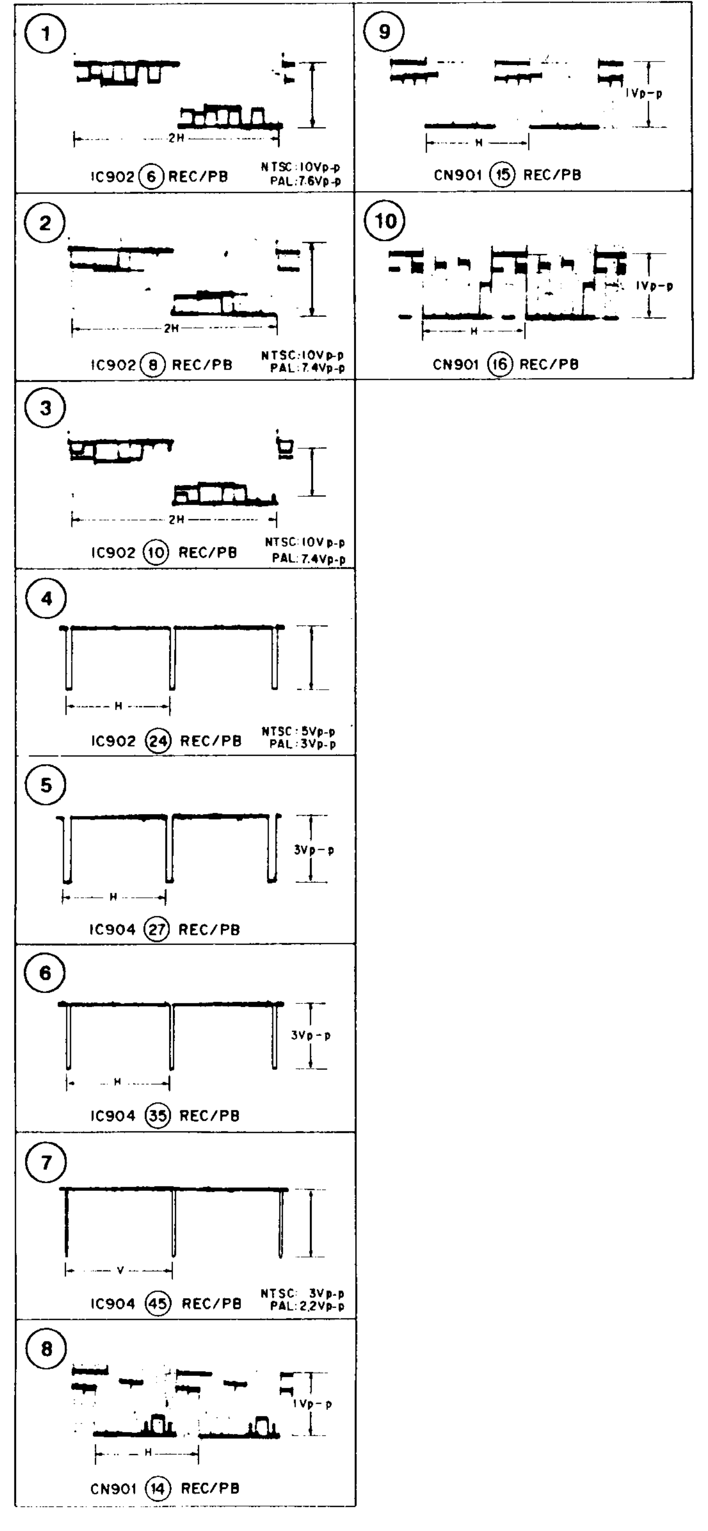
- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor

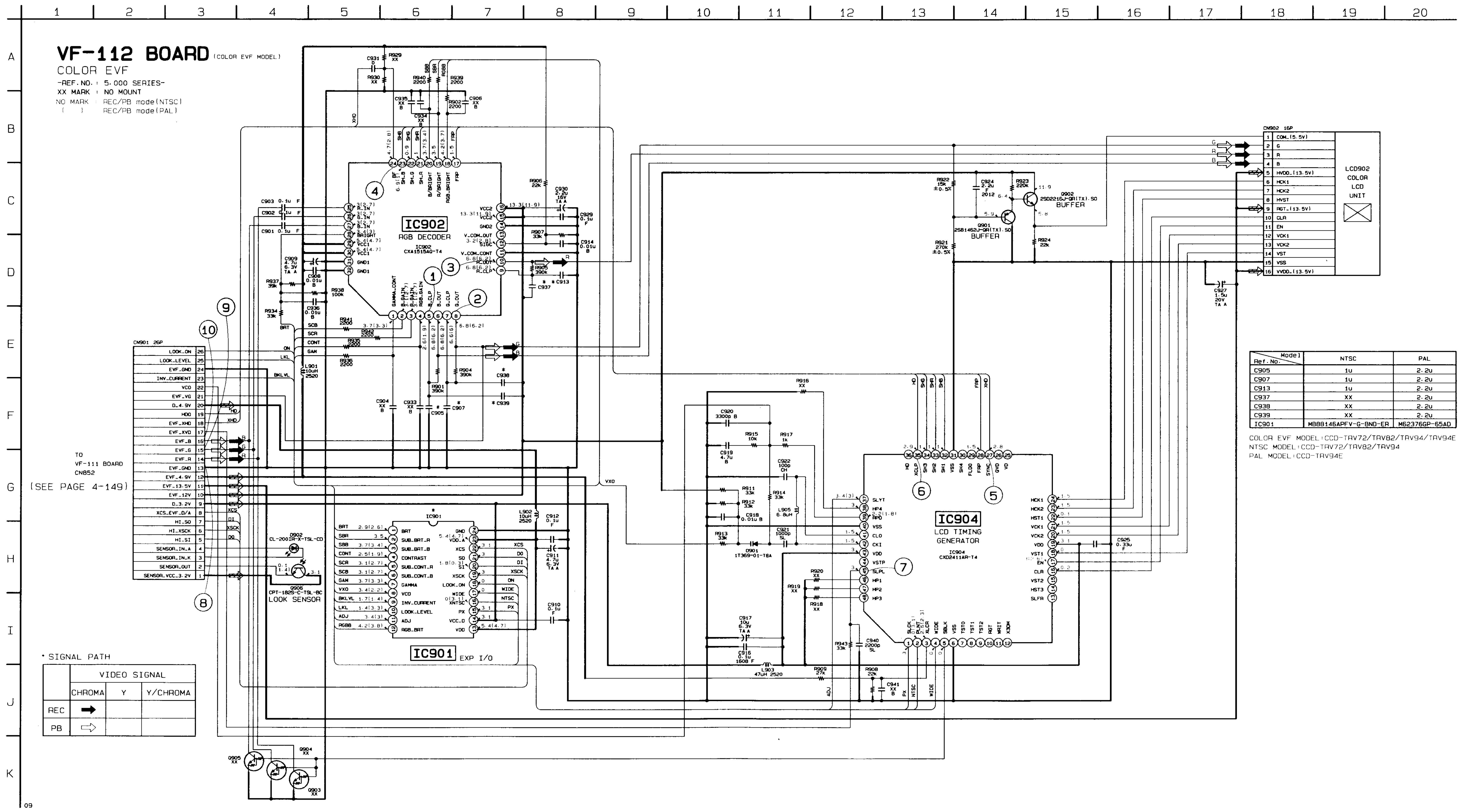


VF-112 BOARD



VF-112 BOARD (COLOR EVF MODEL)

COLOR EVF
-REF.NO.: 5.000 SERIES-
XX MARK : NO MOUNT
NO MARK : REC/PB mode(NTSC)
( ) REC/PB mode(PAL)


IC902
RGB DECODER
IC904
LCD TIMING
GENERATOR
IC901
EXP I/O
LOOK SENSOR
BUFFER
LCD902
COLOR
LCD
UNIT
TO
VF-111 BOARD
CN852
[SEE PAGE 4-149]
09

Model / Ref. No.	NTSC	PAL
C905	1u	2.2u
C907	1u	2.2u
C913	1u	2.2u
C937	XX	2.2u
C938	XX	2.2u
C939	XX	2.2u
IC901	MB88146APFV-G-BND-ER	M62376GP-65AD

COLOR EVF MODEL:CCD-TRV72/TRV82/TRV94/TRV94E
NTSC MODEL:CCD-TRV72/TRV82/TRV94
PAL MODEL:CCD-TRV94E

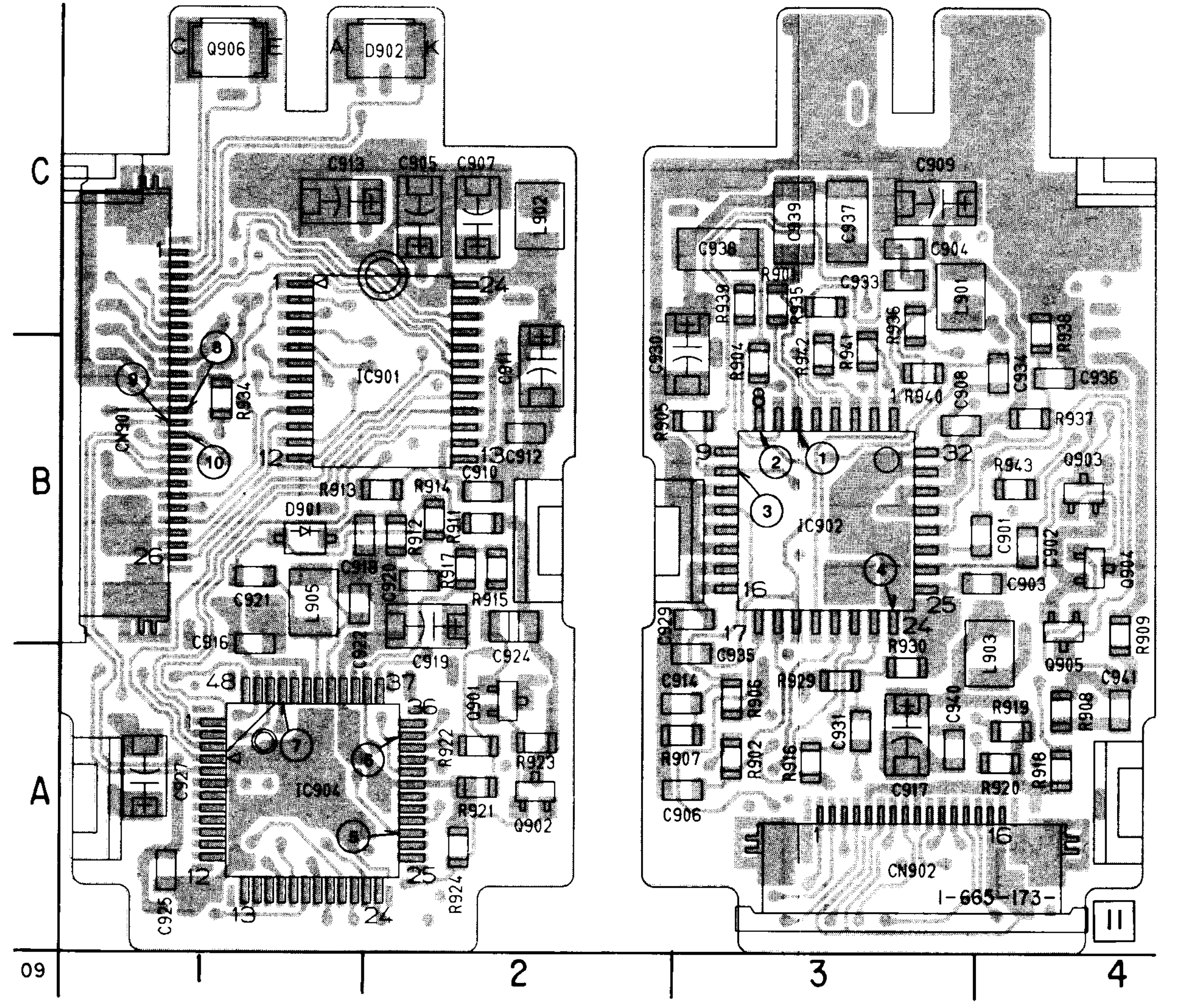
• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

VF-112 (COLOR EVF (COLOR EVF MODEL) PRINTED WIRING BOARD

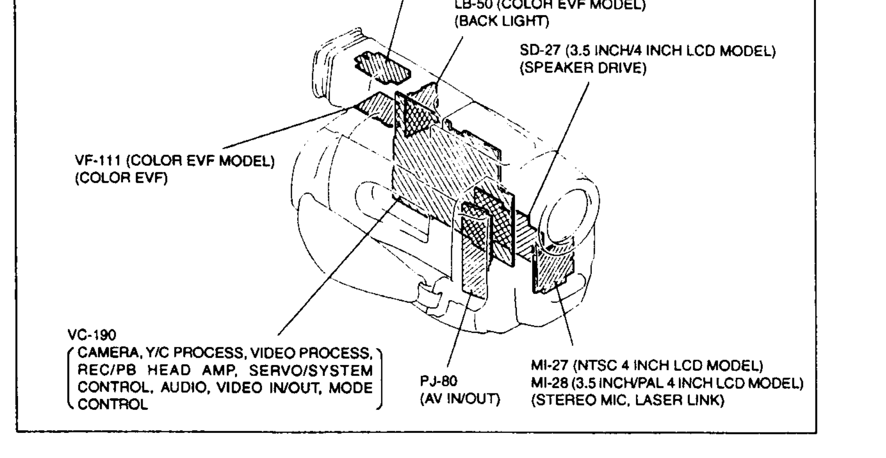
– Ref No. VF-112 BOARD: 5,000 series –

VF-112 BOARD (SIDE B) **VF-112 BOARD (SIDE A)**


C
B
A
1
2
3
4
09
IC901
IC902
CN902
1-665-173-
II

VF-112 BOARD

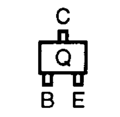
C901	B-4
C902	B-4
C903	B-4
C904	C-3
C905	C-2
C906	A-3
C907	C-2
C908	B-3
C909	C-3
C910	B-2
C911	B-2
C912	B-2
C913	C-1
C914	A-3
C916	B-1
C917	A-3
C918	B-1
C919	B-2
C920	B-2
C921	B-1
C922	B-1
C924	B-2
C925	A-1
C927	A-1
C929	B-3
C930	B-3
C931	A-3
C933	C-3
C934	B-4
C935	A-3
C936	B-4
C937	C-3
C938	C-3
C939	C-3
C940	A-3
C941	A-4
CN901	B-1
CN902	A-3
D901	B-1
D902	C-2
IC901	B-1
IC902	B-3
IC904	A-1
L901	C-3
L902	C-2
L903	A-4
L905	B-1
Q901	A-2
Q902	A-2
Q903	B-4
Q904	B-4
Q906	C-1
R901	C-3
R902	A-3
R904	B-3
R905	B-3
R906	A-3
R907	A-3
R908	A-4
R911	B-2
R912	B-2
R913	B-2
R914	B-2
R915	B-2
R916	A-3
R917	B-2
R918	A-4
R919	A-4
R920	A-4
R921	A-2
R922	A-2
R923	A-2
R924	A-2
R929	A-3
R930	A-3
R934	B-1
R935	C-3
R936	C-3
R937	B-4
R938	B-4
R939	C-3
R940	B-3
R941	B-3
R942	B-3
R943	B-4


VF-112 (COLOR EVF MODEL)
(COLOR EVF)
LB-50 (COLOR EVF MODEL)
(BACK LIGHT)
SD-27 (3.5 INCH/4 INCH LCD MODEL)
(SPEAKER DRIVE)
VF-111 (COLOR EVF MODEL)
(COLOR EVF)
VC-190
CAMERA, Y/C PROCESS, VIDEO PROCESS, REC/PB HEAD AMP, SERVO/SYSTEM CONTROL, AUDIO, VIDEO IN/OUT, MODE CONTROL
PJ-80
(AV IN/OUT)
MI-27 (NTSC 4 INCH LCD MODEL)
MI-28 (3.5 INCH/PAL 4 INCH LCD MODEL)
(STEREO MIC, LASER LINK)

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

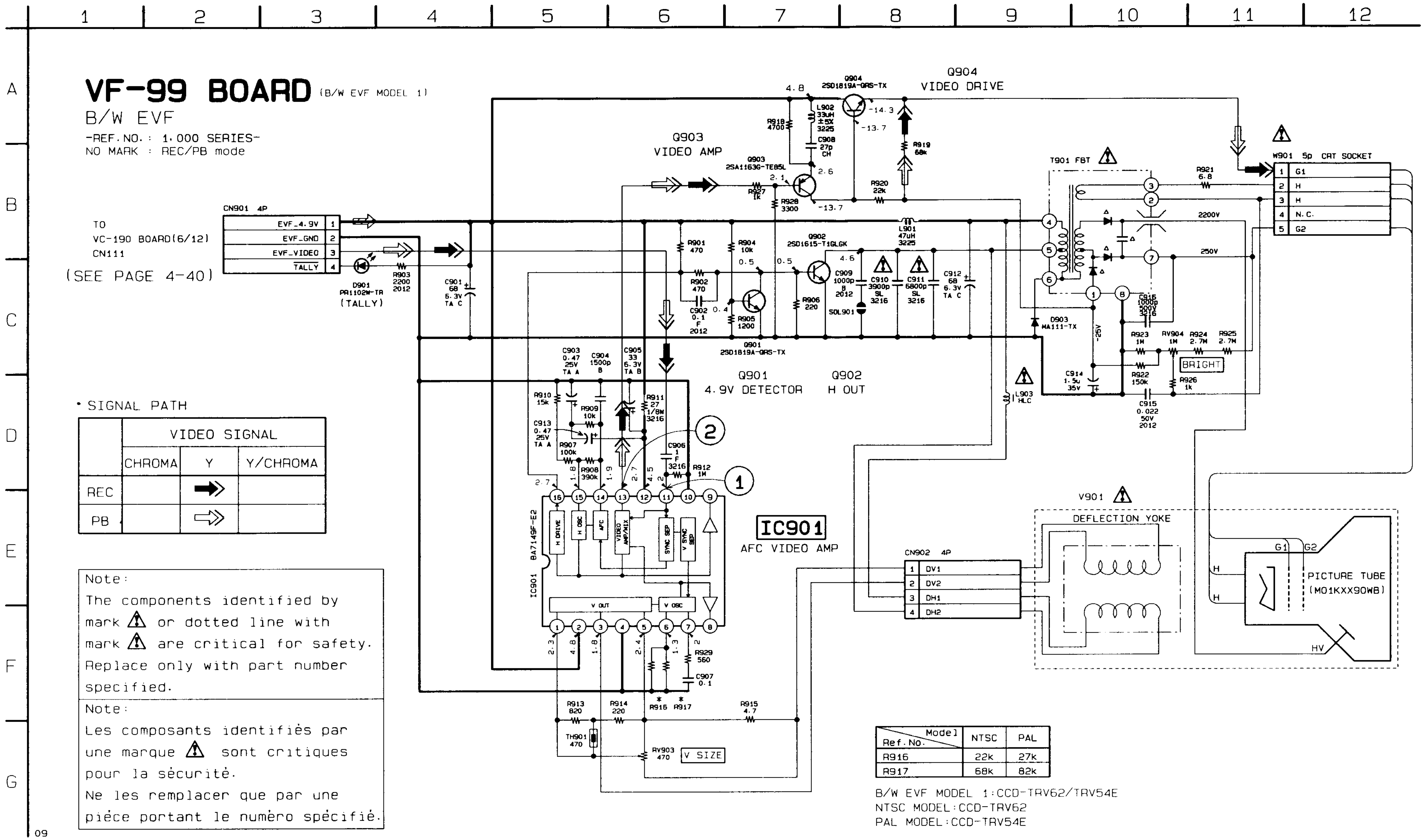
- Chip transistor



VF-99 BOARD (B/W EVF MODEL 1)

B/W EVF

-REF. NO. : 1,000 SERIES-
NO MARK : REC/PB mode


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
TO
VC-190 BOARD(6/12)
CN111
(SEE PAGE 4-40)
CN901 4P
EVF_4.9V 1
EVF_GND 2
EVF_VIDEO 3
TALLY 4
D901
PR1102W-TR
(TALLY)
R903
2200
2012
C901
68
6.3V
TA C
Q903
VIDEO AMP
Q903
2SA1163G-TE85L
R927
1k
R928
3300
2.1
2.6
-13.7
4.8
Q904
2SD1819A-QRS-TX
Q904
VIDEO DRIVE
L902
33uH
±5%
3225
R918
4700
C908
27p
CH
-14.3
-13.7
R919
68k
R920
22k
R901
470
R904
10k
R902
470
C902
0.1
F
2012
0.5
0.5
0.4
R905
1200
Q901
2SD1819A-QRS-TX
Q902
2SD1615-T1GLGK
4.6
R906
220
C909
1000p
B
2012
SOL901
C910
3900p
SL
3216
C911
6800p
SL
3216
L901
47uH
3225
C912
68
6.3V
TA C
Q901
4.9V DETECTOR
Q902
H OUT
T901 FBT
R921
6.8
2200V
250V
D903
MA111-TX
-25V
C916
1000p
500V
3216
R923
1M
RV904
1M
R924
2.7M
R925
2.7M
BRIGHT
R922
150k
R926
1k
C914
1.5u
35V
C915
0.022
50V
2012
L903
HLC
W901 5p CRT SOCKET
1 G1
2 H
3 H
4 N.C.
5 G2
C903
0.47
25V
TA A
C904
1500p
B
C905
33
6.3V
TA B
R910
15k
R909
10k
R911
27
1/8W
3216
C913
0.47
25V
TA A
R907
100k
R908
390k
C906
1
F
3216
R912
1M
①
②
2.7
1.8
1.9
2.7
4.5
2
IC901
BA7149F-E2
H DRIVE
H OSC
AFC
VIDEO AMP/MIX
SYNC SEP
V SYNC SEP
V OUT
V OSC
2.3
4.8
1.8
2.4
1.3
2
R929
560
C907
0.1
R913
820
R914
220
*R916
*R917
R915
4.7
TH901
470
RV903
470
V SIZE
IC901
AFC VIDEO AMP
CN902 4P
1 DV1
2 DV2
3 DH1
4 DH2
V901
DEFLECTION YOKE
G1
G2
H
H
PICTURE TUBE
(M01KXX90WB)
HV
09

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		➡	
PB		⇨	

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiès par une marque ⚠ sont critiques pour la sècuritè.
Ne les remplacer que par une piéce portant le numèro spècifiè.

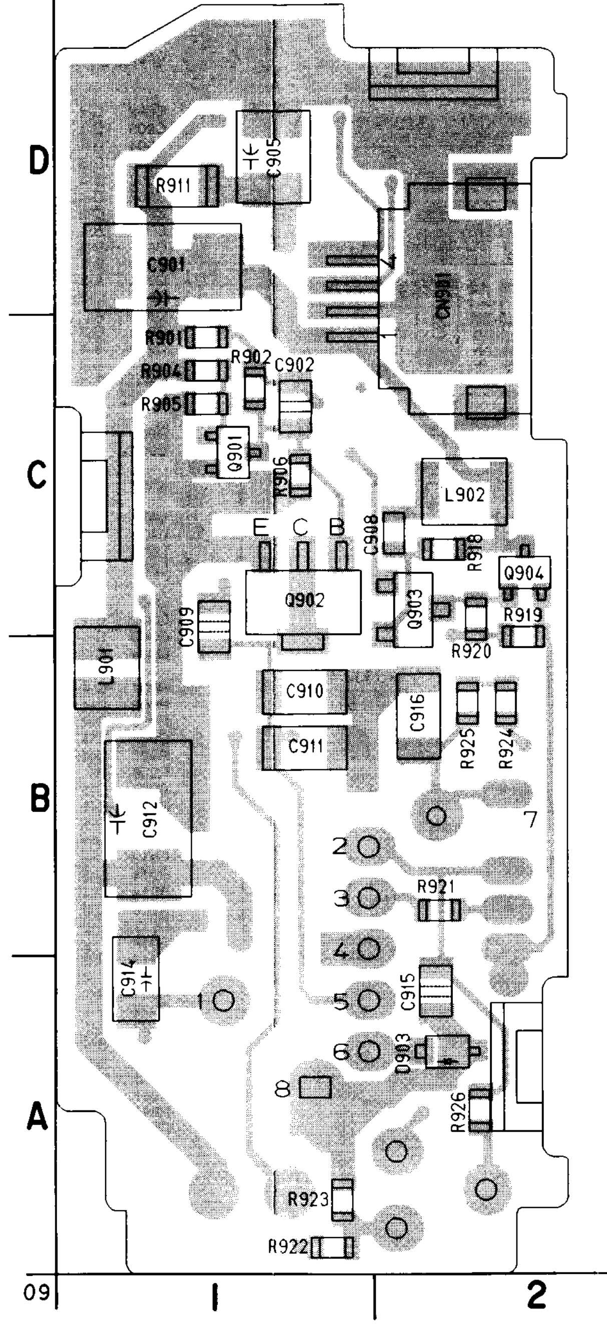
Model / Ref. No.	NTSC	PAL
R916	22k	27k
R917	68k	82k

B/W EVF MODEL 1:CCD-TRV62/TRV54E
NTSC MODEL:CCD-TRV62
PAL MODEL:CCD-TRV54E

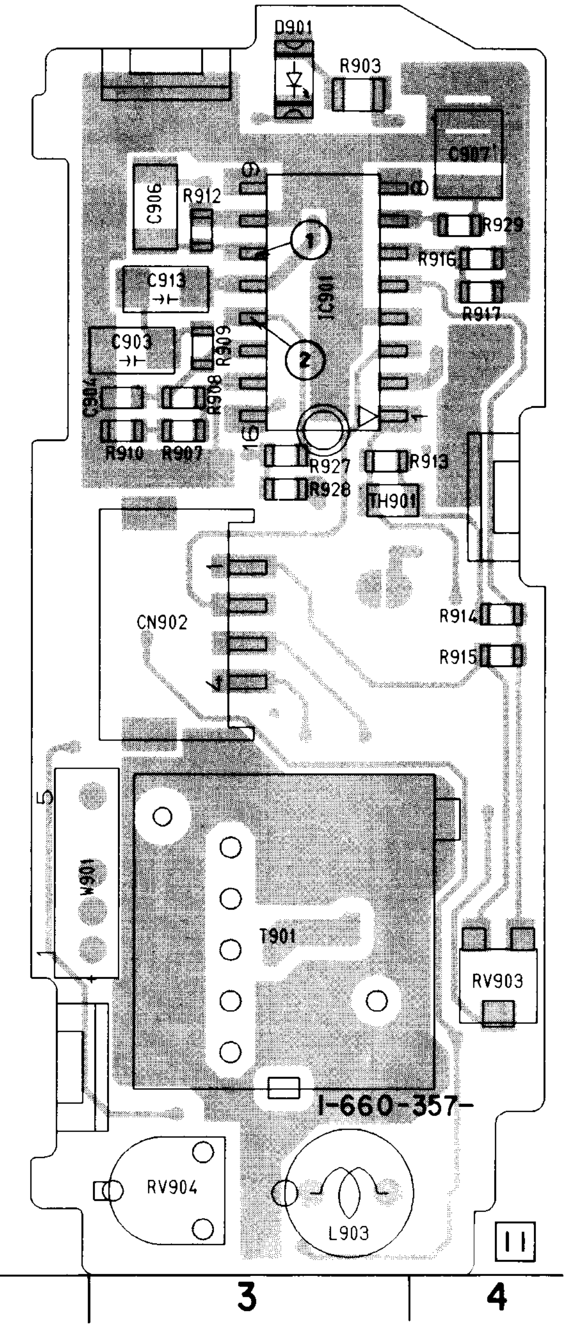
VF-99 (B/W EVF (B/W EVF MODEL 1)) PRINTED WIRING BOARD

– Ref No. VF-99 BOARD: 1,000 series –

VF-99 BOARD (SIDE A)

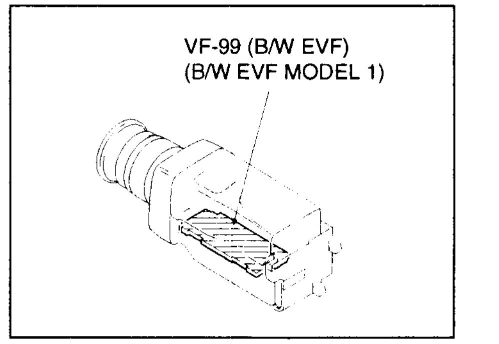

D
C
B
A
C905
R911
C901
R901
R904
R905
R902
C902
Q901
C906
E
C
B
L902
Q902
C908
R918
Q904
Q903
R919
R920
L901
C909
C910
C911
C916
R925
R924
C912
R921
C914
C915
D903
R926
R923
R922
CN901
1
2
3
4
5
6
7
8
09
1
2

VF-99 BOARD (SIDE B)


D901
R903
C907
C906
R912
R929
R916
R917
C913
C903
C904
R907
R908
R909
R910
IC901
R927
R928
R913
TH901
CN902
R914
R915
W901
T901
RV903
RV904
L903
1-660-357-
11
5
3
4

VF-99 BOARD

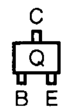
C901	D-1
C902	C-1
C903	C-3
C904	C-3
C905	D-1
C906	D-3
C907	D-4
C908	C-2
C909	C-1
C910	B-1
C911	B-1
C912	B-1
C912	D-3
C913	D-3
C914	A-1
C915	A-2
C916	B-2
CN901	D-2
CN902	C-3
D901	D-3
D903	A-2
IC901	D-3
L901	B-1
L902	C-2
L903	A-3
Q901	C-1
Q902	C-1
Q903	C-2
Q904	C-2
R901	C-1
R902	C-1
R903	D-3
R904	C-1
R905	C-1
R906	C-1
R907	C-3
R908	C-3
R909	C-3
R910	C-3
R911	D-1
R913	C-3
R914	C-4
R915	B-4
R916	D-4
R917	D-4
R918	C-2
R919	C-2
R920	C-2
R921	B-2
R922	A-1
R923	A-1
R924	B-2
R925	B-2
R926	A-2
R927	C-3
R928	C-3
R929	D-4
RV903	A-4
RV904	A-3
T901	B-3
TH901	C-3
W901	B-3


VF-99 (B/W EVF)
(B/W EVF MODEL 1)

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

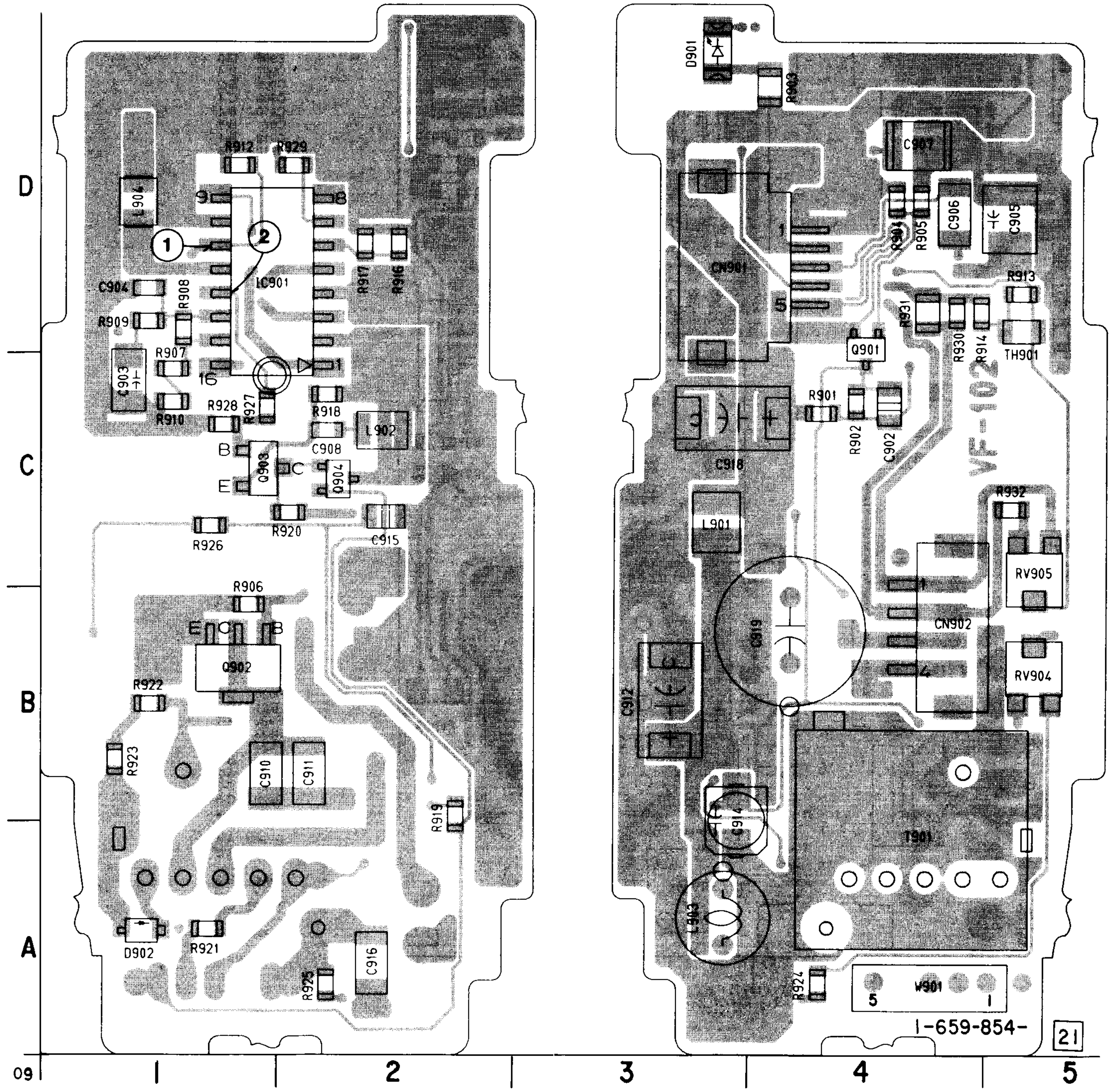
- Chip transistor



VF-102 (B/W EVF (B/W EVF MODEL 2)) PRINTED WIRING BOARD

– Ref No. VF-102 BOARD: 5,000 series –

VF-102 BOARD (SIDE B) **VF-102 BOARD (SIDE A)**


D
C
B
A
09
1
2
3
4
5
IC901
Q901
Q902
Q903
CN901
CN902
T901
W901
RV904
RV905
TH901
D901
D902
L901
L902
VF-102
1-659-854-
21

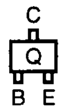
VF-102 BOARD

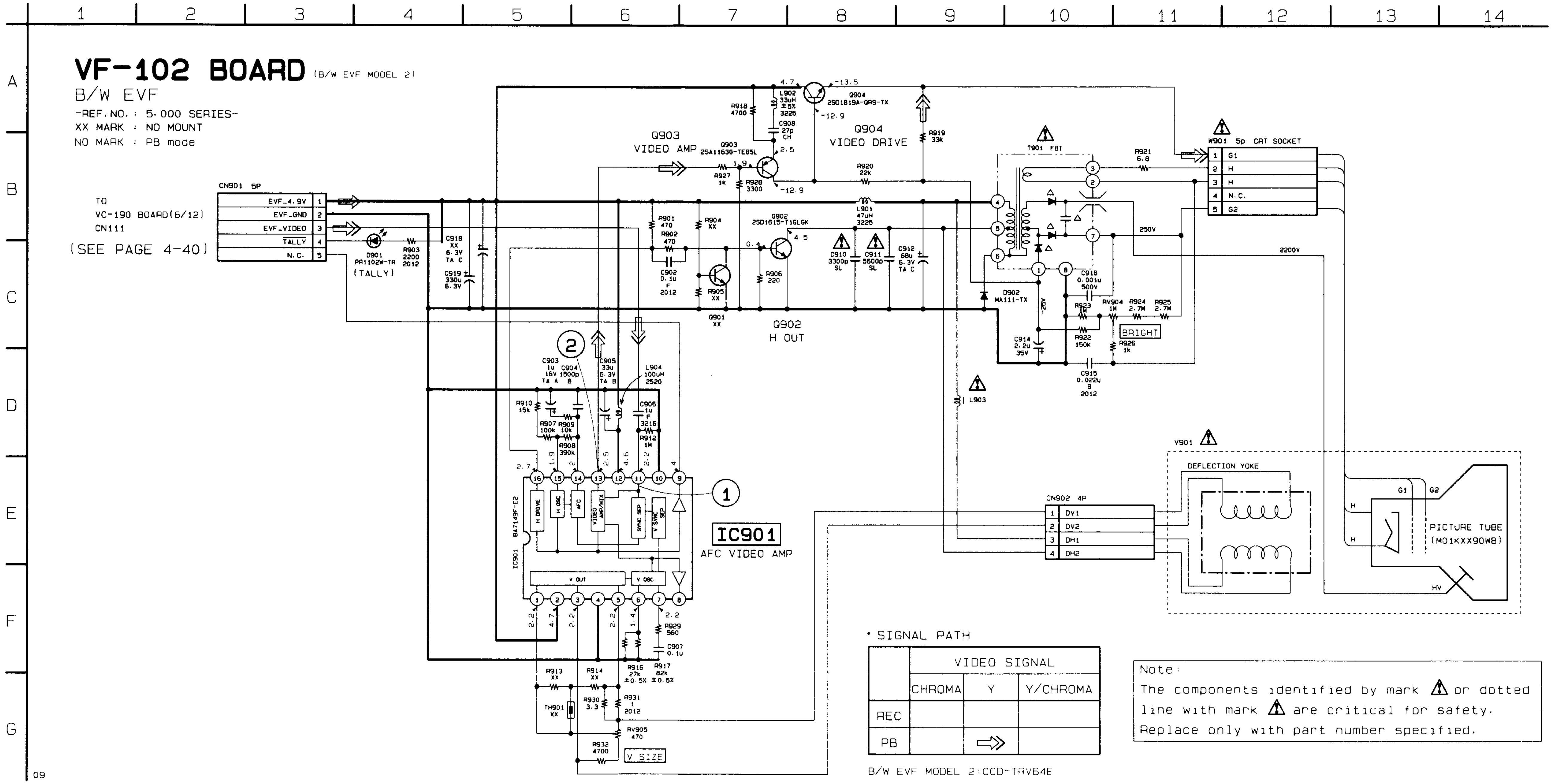
C902	C-4
C903	C-1
C904	D-1
C905	D-5
C906	D-4
C907	D-4
C908	C-2
C910	B-1
C911	B-2
C912	B-3
C914	A-3
C915	C-2
C916	A-2
C918	C-3
C919	B-4
CN901	D-3
CN902	B-4
D901	D-3
D902	A-1
IC901	D-1
L901	C-3
L902	C-2
L903	A-3
L904	D-1
Q901	C-4
Q902	B-1
Q903	C-1
Q904	C-2
R901	C-4
R902	C-4
R903	D-4
R904	D-4
R905	D-4
R906	B-1
R907	C-1
R908	D-1
R909	D-1
R910	C-1
R912	D-1
R913	D-5
R914	D-4
R916	D-2
R917	D-2
R918	C-2
R919	B-2
R920	C-2
R921	A-1
R922	B-1
R923	B-1
R924	B-4
R925	A-2
R926	C-1
R927	C-1
R928	C-1
R929	D-2
R930	D-4
R931	D-4
R932	C-5
RV904	B-5
RV905	C-5
T901	A-4
TH901	D-5
W901	A-1

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor



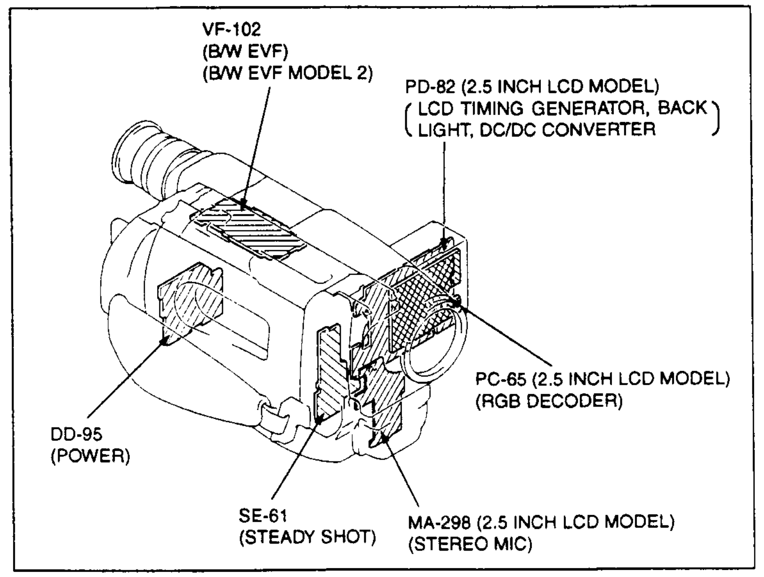

VF-102 BOARD (B/W EVF MODEL 2)
B/W EVF
-REF.NO.: 5,000 SERIES-
XX MARK : NO MOUNT
NO MARK : PB mode
TO
VC-190 BOARD(6/12)
CN111
(SEE PAGE 4-40)
CN901 5P
EVF_4.9V
EVF_GND
EVF_VIDEO
TALLY
N.C.
D901
PR1102W-TR
(TALLY)
R903
2200
2012
C918
XX
6.3V
TA C
C919
330u
6.3V
Q903
VIDEO AMP
Q904
VIDEO DRIVE
Q902
H OUT
IC901
AFC VIDEO AMP
T901 FBT
W901 5p CRT SOCKET
G1
H
H
N.C.
G2
CN902 4P
DV1
DV2
DH1
DH2
V901
DEFLECTION YOKE
PICTURE TUBE
(M01KXX90WB)
HV
BRIGHT
V SIZE
D902
MA111-TX
L903
250V
2200V
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
09

- SIGNAL PATH

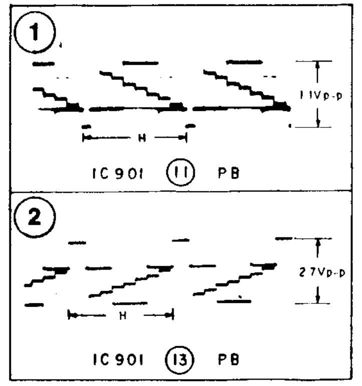
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB		⇨	

B/W EVF MODEL 2:CCD-TRV64E

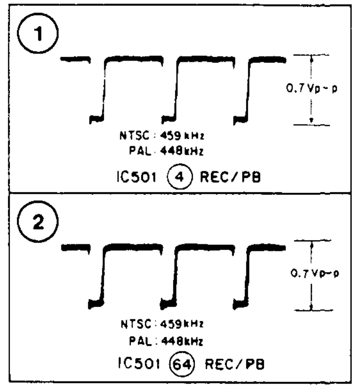
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.


VF-102
(B/W EVF)
(B/W EVF MODEL 2)
PD-82 (2.5 INCH LCD MODEL)
(LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER)
PC-65 (2.5 INCH LCD MODEL)
(RGB DECODER)
DD-95
(POWER)
SE-61
(STEADY SHOT)
MA-298 (2.5 INCH LCD MODEL)
(STEREO MIC)

VF-102 BOARD



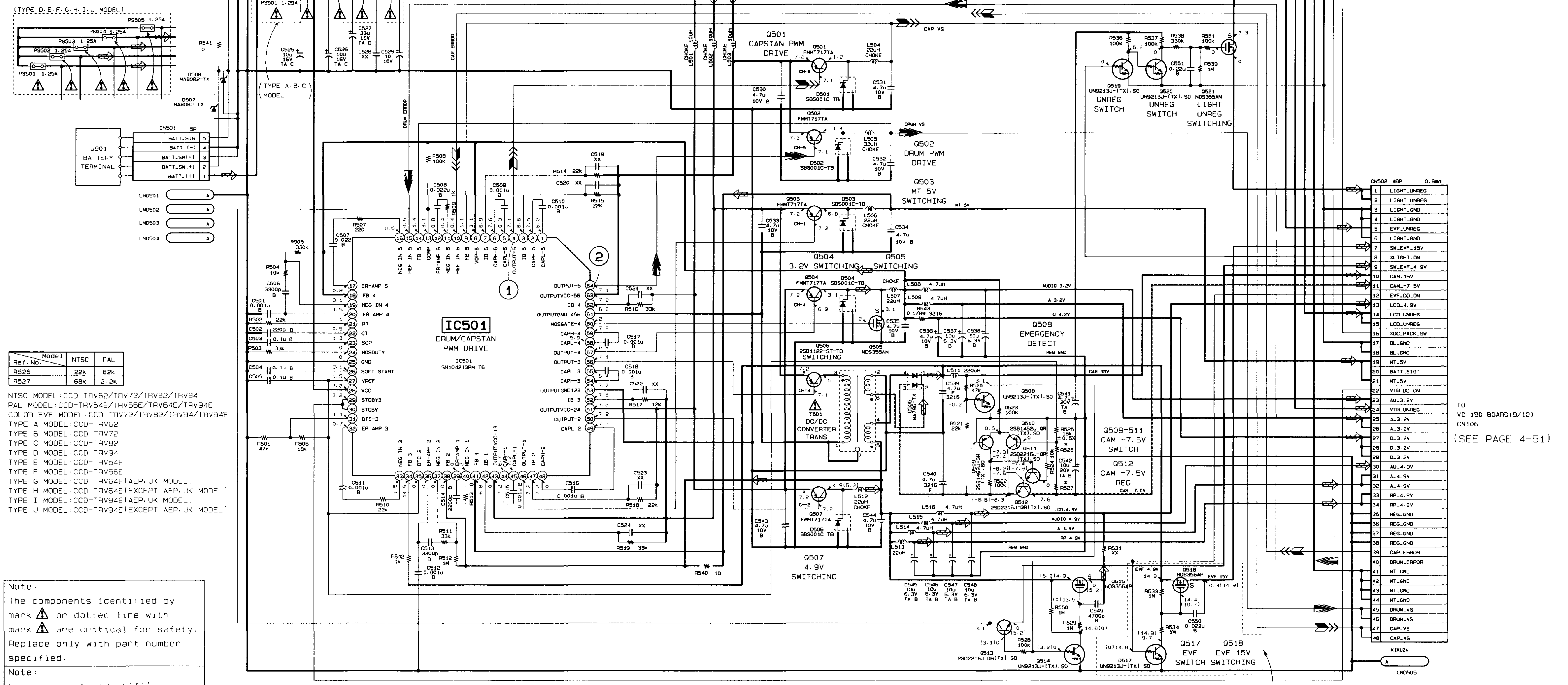
DD-95 BOARD



DD-95 BOARD

POWER

-REF.NO. : 5,000 SERIES-
XX MARK : NO MOUNT
NO MARK : REC/PB mode
( ) : REC/PB mode (COLOR EVF ON)



(TYPE D,E,F,G,H,I,J MODEL)
PS501 1.25A
PS502 1.25A
PS503 1.25A
PS504 1.25A
PS505 1.25A
(TYPE A,B,C MODEL)
J901 BATTERY TERMINAL
CN501 5P
BATT_SIG
BATT_(-)
BATT_SW(-)
BATT_SW(+)
BATT_(+)
LND501
LND502
LND503
LND504
D508 MA8082-TX
D507 MA8082-TX
UNREG GND
MT UNREG GND
LCD UNREG
LIGHT UNREG
MT UNREG
VTR UNREG 1
VTR UNREG 2
CAP ERROR
DRUM ERROR
CAP VS
DRUM VS
IC501
DRUM/CAPSTAN PWM DRIVE
IC501 SN104213PM-T6
Q501 CAPSTAN PWM DRIVE
Q502 DRUM PWM DRIVE
Q503 MT 5V SWITCHING
Q504 3.2V SWITCHING
Q505 SWITCHING
Q506 SWITCHING
T501 DC/DC CONVERTER TRANS
Q507 4.9V SWITCHING
Q508 EMERGENCY DETECT
Q509-511 CAM -7.5V SWITCH
Q512 CAM -7.5V REG
Q519 UNREG SWITCH
Q520 UNREG SWITCH
Q521 LIGHT UNREG SWITCHING
AUDIO 3.2V
A 3.2V
D 3.2V
AUDIO 4.9V
A 4.9V
RP 4.9V
CAM 15V
CAM -7.5V
REG GND
Q513 EVF SWITCH
Q514 EVF SWITCH
Q515 EVF 4.9V SWITCHING
Q517 EVF SWITCH
Q518 EVF 15V SWITCHING
(COLOR EVF MODEL)
(TYPE A MODEL is B/W EVF MODEL, but the parts are mounted.)
CN502 48P 0.8mm
1 LIGHT_UNREG
2 LIGHT_UNREG
3 LIGHT_GND
4 LIGHT_GND
5 EVF_UNREG
6 LIGHT_GND
7 SW_EVF_15V
8 XLIGHT_ON
9 SW_EVF_4.9V
10 CAM_15V
11 CAM_-7.5V
12 EVF_DD_ON
13 LCD_4.9V
14 LCD_UNREG
15 LCD_UNREG
16 XDC_PACK_SW
17 BL_GND
18 BL_GND
19 MT_5V
20 BATT_SIG
21 MT_5V
22 VTR_DD_ON
23 AU_3.2V
24 VTR_UNREG
25 A_3.2V
26 A_3.2V
27 D_3.2V
28 D_3.2V
29 D_3.2V
30 AU_4.9V
31 A_4.9V
32 A_4.9V
33 RP_4.9V
34 RP_4.9V
35 REG_GND
36 REG_GND
37 REG_GND
38 REG_GND
39 CAP_ERROR
40 DRUM_ERROR
41 MT_GND
42 MT_GND
43 MT_GND
44 MT_GND
45 DRUM_VS
46 DRUM_VS
47 CAP_VS
48 CAP_VS
KIKUZA
LND505

Model / Ref. No.	NTSC	PAL
R526	22k	82k
R527	68k	2.2k

NTSC MODEL:CCD-TRV62/TRV72/TRV82/TRV94
PAL MODEL:CCD-TRV54E/TRV56E/TRV64E/TRV94E
COLOR EVF MODEL:CCD-TRV72/TRV82/TRV94/TRV94E
TYPE A MODEL:CCD-TRV62
TYPE B MODEL:CCD-TRV72
TYPE C MODEL:CCD-TRV82
TYPE D MODEL:CCD-TRV94
TYPE E MODEL:CCD-TRV54E
TYPE F MODEL:CCD-TRV56E
TYPE G MODEL:CCD-TRV64E(AEP,UK MODEL)
TYPE H MODEL:CCD-TRV64E(EXCEPT AEP,UK MODEL)
TYPE I MODEL:CCD-TRV94E(AEP,UK MODEL)
TYPE J MODEL:CCD-TRV94E(EXCEPT AEP,UK MODEL)

TO
VC-190 BOARD(9/12)
CN106
(SEE PAGE 4-51)

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

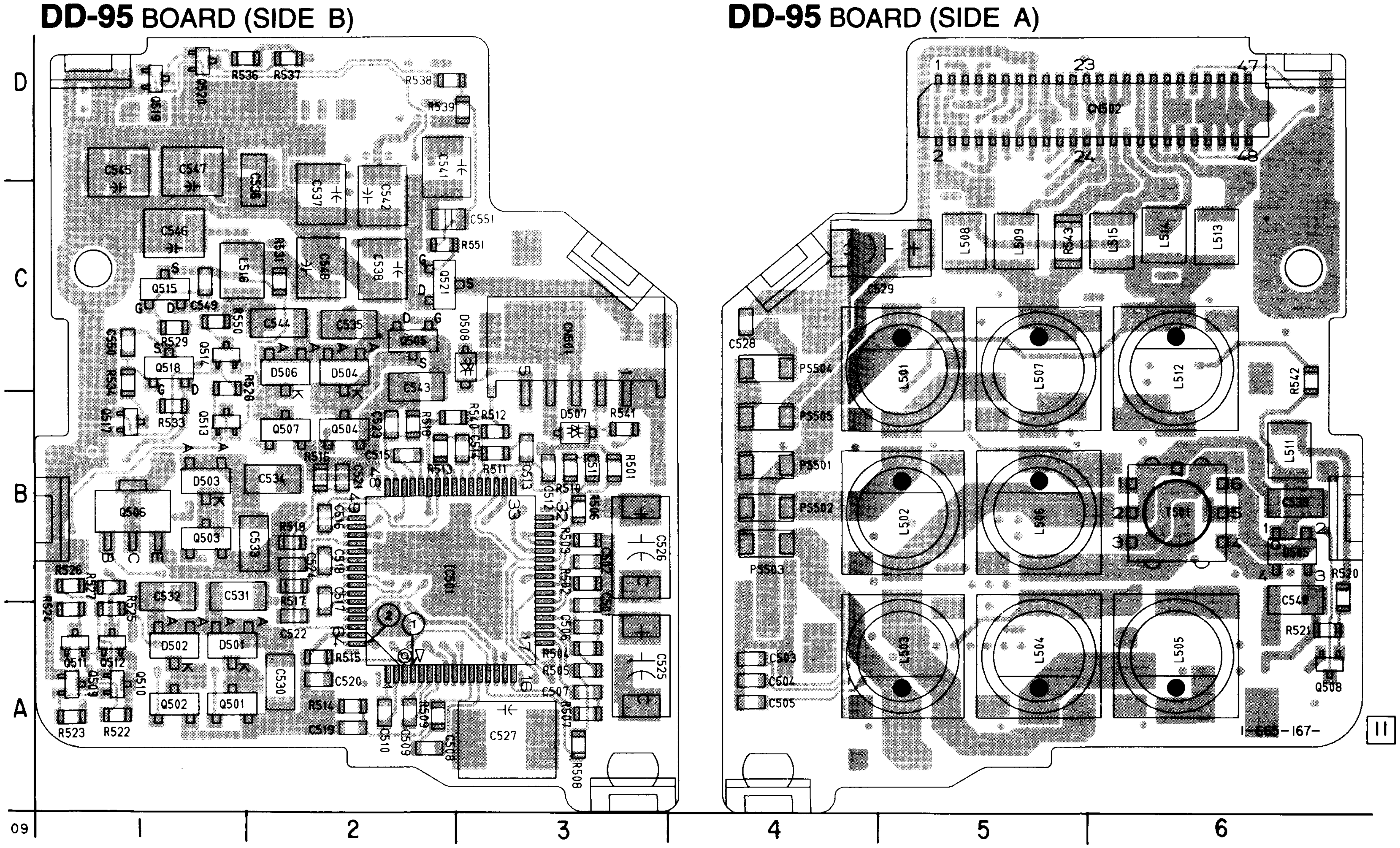
Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

• SIGNAL PATH

	REC	REC/PB	PB
Drum servo(speed and phase)		➤	
Capstan servo(speed and phase)		➤»	

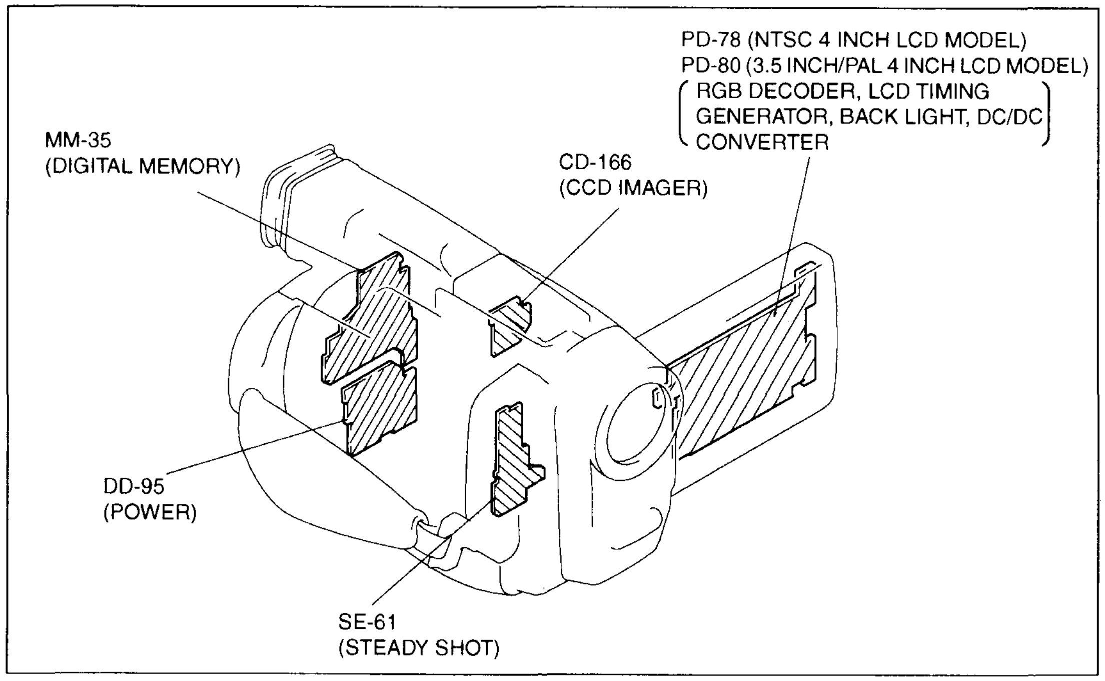
DD-95 (POWER) PRINTED WIRING BOARD

– Ref No. DD-95 BOARD: 5,000 series –


DD-95 BOARD (SIDE B)

DD-95 BOARD (SIDE A)

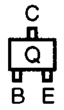
D
C
B
A
09
1
2
3
4
5
6
CN502
CN501
IC501
T501
1
2
23
24
47
48
Q505
Q506
Q515
Q518
Q503
Q501
Q502
Q504
Q507
Q508
Q521
D501
D502
D503
D504
D506
D507
D508
L501
L502
L503
L504
L505
L506
L507
L508
L509
L511
L512
L513
L514
L515
L516
PS501
PS502
PS503
PS504
PS505
C525
C526
C527
C528
C529
C530
C531
C532
C533
C534
C535
C543
C544
C545
C546
C547
R536
R537
R538
R539
R520
R521
R542
R543
1-665-167-
11


PD-78 (NTSC 4 INCH LCD MODEL)
PD-80 (3.5 INCH/PAL 4 INCH LCD MODEL)
RGB DECODER, LCD TIMING GENERATOR, BACK LIGHT, DC/DC CONVERTER
MM-35
(DIGITAL MEMORY)
CD-166
(CCD IMAGER)
DD-95
(POWER)
SE-61
(STEADY SHOT)

- **For Printed Wiring Boards.**
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor



DD-95 BOARD

C501	A-3
C502	B-3
C503	A-4
C504	A-4
C505	A-4
C506	A-3
C507	A-3
C508	A-2
C509	A-2
C510	A-2
C511	B-3
C512	B-3
C513	B-3
C514	B-3
C515	B-2
C516	B-2
C517	B-2
C518	B-2
C519	A-2
C520	A-2
C521	B-2
C522	A-2
C523	B-2
C524	B-2
C525	A-3
C526	B-3
C527	A-3
C528	C-4
C529	C-4
C530	A-2
C531	B-1
C532	B-1
C533	B-2
C534	B-2
C535	C-2
C536	C-2
C537	C-2
C538	C-2
C539	B-6
C540	B-6
C541	D-2
C542	C-2
C543	C-2
C544	C-2
C545	D-1
C546	C-1
C547	D-1
C548	C-2
C549	C-1
C550	C-1
C551	C-2
CN501	C-3
CN502	D-6
D501	A-1
D502	A-1
D503	B-1
D504	C-2
D505	B-6
D506	C-2
D507	B-3
D508	C-3
IC501	A-2
L501	C-5
L502	B-5
L503	A-5
L504	A-5
L505	A-6
L506	B-5
L507	C-5
L508	C-5
L509	C-5
L511	B-6
L512	C-6
L513	C-6
L514	C-6
L515	C-6
L516	C-1
PS501	B-4
PS502	B-4
PS503	B-4
PS504	C-4
PS505	B-4
Q501	A-1
Q502	A-1
Q503	B-1
Q504	B-2
Q505	C-2
Q506	B-1
Q507	B-2
Q508	A-6
Q509	A-1
Q510	A-1
Q511	A-1
Q512	A-1
Q513	B-1
Q514	C-1
Q515	C-1
Q517	B-1
Q518	C-1
Q519	D-1
Q520	D-1
Q521	C-2
R501	B-3
R502	B-3
R503	B-3
R504	A-3
R505	A-3
R506	B-3
R507	A-3
R508	A-3
R509	A-2
R510	B-3
R511	B-3
R512	B-3
R513	B-2
R514	A-2
R515	A-2
R516	B-2
R517	B-2
R518	B-2
R519	B-2
R520	B-6
R521	A-6
R522	A-1
R523	A-1
R524	A-1
R525	A-1
R526	B-1
R527	B-1
R528	C-1
R529	C-1
R531	C-2
R533	B-1
R534	C-1
R536	D-1
R537	D-2
R538	D-2
R539	D-2
R540	B-2
R541	B-3
R542	C-6
R543	C-5
R550	C-1
R551	C-2
T501	B-6

SECTION 5
ADJUSTMENTS

Refer to page 3 as Table for distinction functions of models and classification

5-1. CAMERA SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 5-58.

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Adjusting driver
- Color monitor
- Regulated power supply
- Vectorscope
- Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0 3	J-6080-818-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjusting remote commander (RM-95-remodeled partly)Note 1	J-6082-053-B	
J-6	Siemens star	J-6080-875-A	For checking the flange back
J-7	Multi CPC jig	J-6082-311-A	For adjusting LCD block
J-8	CPC-7 jig	J-6082-382-A	For the color viewfinder adjustment For adjusting the video section
J-9	Power code	J-6082-223-A	For connecting the battery terminal and DC power supply
J-10	AFM DEV jig	J-6082-312-A	For adjusting the deviation
J-11	Clear chart	J-6080-621-A	
J-12	Extension cable (16P, 0 5 mm)	J-6082-357-A	For extension between the CD-166 board (CN401) and VC-190 board (CN112)
J-13	IR receiver jig	J-6082-383-A	For adjusting the IR transmitter

Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched In this case, replace with the new micro processor (8-759-148-35)

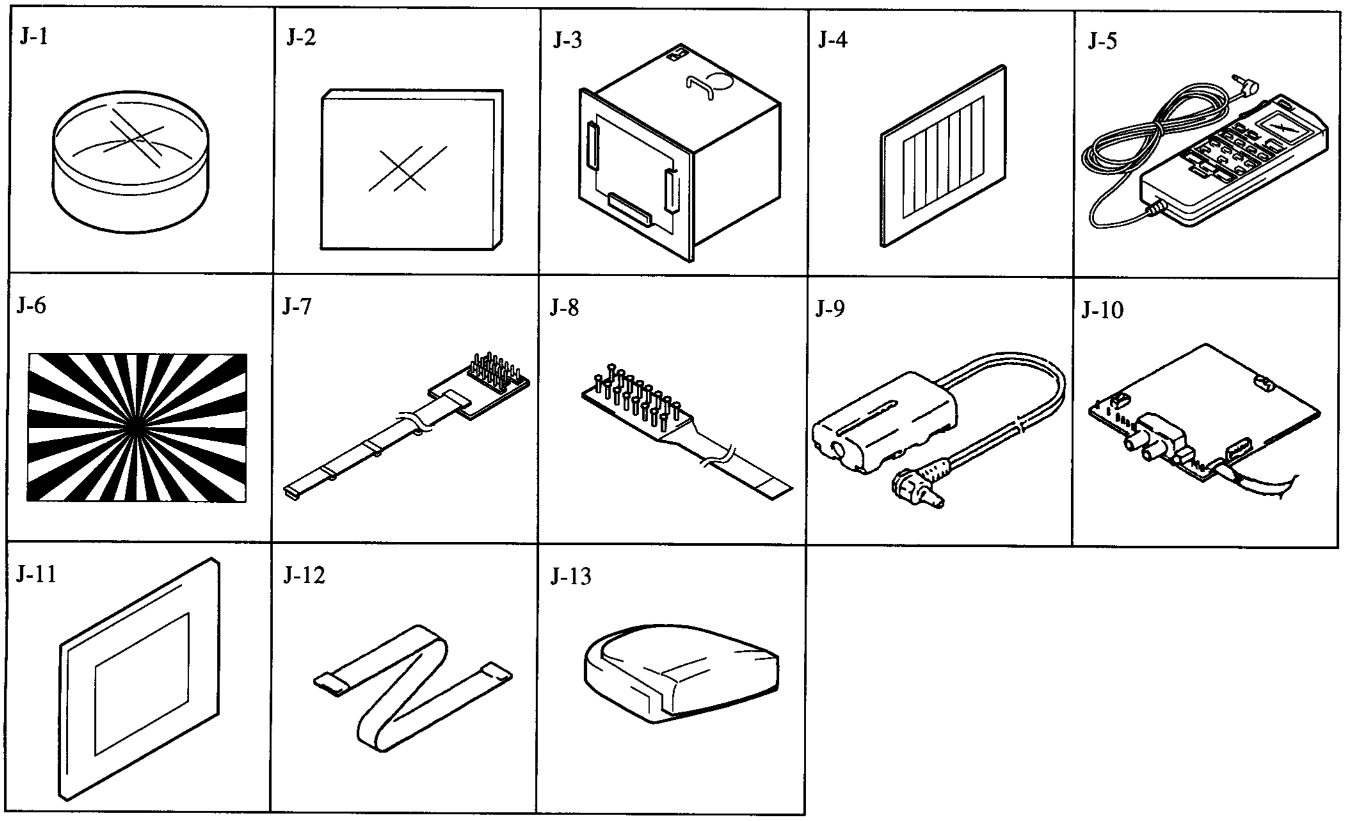

J-1
J-2
J-3
J-4
J-5
J-6
J-7
J-8
J-9
J-10
J-11
J-12
J-13

Fig. 5-1-1.

1-1-2. Preparations

Note 1: Refer to "Section 2 DISASSEMBLY" for details of how to remove the cabinet and boards.

Note 2: If performing only adjustments, the lens block and VC-190 board need not be adjusted.

1) Connect the adjusting equipment according to Fig. 5-1-3, 4
2) The front panel block (MI-27/MI-28/MA-298 boards) need not be connected.
   To remove, disconnect the following connector
   1 CN303 (26P, 0.5 mm) of MI-27/28 board (3.5" LCD/4" LCD model)
   CN303 (14P, 0.5 mm) of MA-298 board (2 5" LCD model)
   (Refer to pages 5-58 for the Arrangement Diagram for Adjustment Parts.)
3) The accessory shoe need not be connected
   To remove, disconnect the following connector.
   1. CN205 of VC-190 board (10P, 0.5 mm)
   (Refer to pages 5-92 for the Arrangement Diagram for Adjustment Parts)
4) The viewfinders (VF-111, 112 boards (COLOR EVF model), VF-99/102 board (B/W EVF model) need not be connected To remove, disconnect the following connector
   1. CN111 of VC-190 board (20P, 0 5 mm)
   (Refer to pages 5-58 for the Arrangement Diagram for Adjustment Parts.)
5) By setting the "forced power supply ON mode", the camera power supply can be turned ON even if the cabinet (R) (power switch, speaker, SD-27/28 board) has been removed When removing the cabinet (R), disconnect the following two connectors However, as removing CN1953 means removing the lithium 3V power supply, data such as date, time, user-set menus will be lost After adjustments, reset these data. If CN1953 has been removed, the self-diagnosis data, data on history of use (total drum rotation time, date of when the user first turned the power ON, and the date of when condensation occurred the last time) will be lost. Before removing, note down the self-diagnosis data and data of page:3, address:E0 to E9. (Refer to the "Service Mode" of "VIDEO SECTION ADJUSTMENTS" for the data on the history of use.)
   1 CN1950 of VC-190 board (28P, 0.5 mm)
   2 CN1953 of VC-190 board (28P, 0.5 mm)
   (Refer to pages 5-58 for the Arrangement Diagram for Adjustment Parts.)

After the adjustments, be sure to exit the "forced camera power supply ON mode".

Note 3: Setting the "forced camera power supply ON mode"
1) Set data: 01 to page: 0, address: 01.
2) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.

The camera power supply can be turned ON even if the cabinet (R) has been removed using the above steps After completing adjustments, be sure to exit the "forced Camera power supply ON mode".

Note 4: Exiting the "forced camera power supply ON mode"
1) Set data: 01 to page: 0, address: 01.
2) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 0, address: 01.

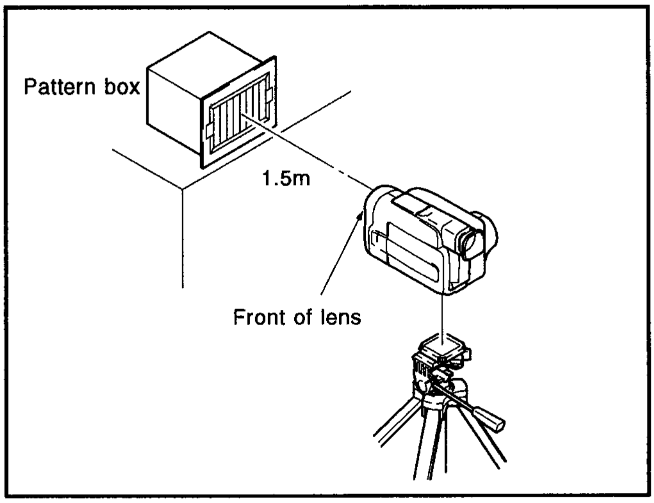
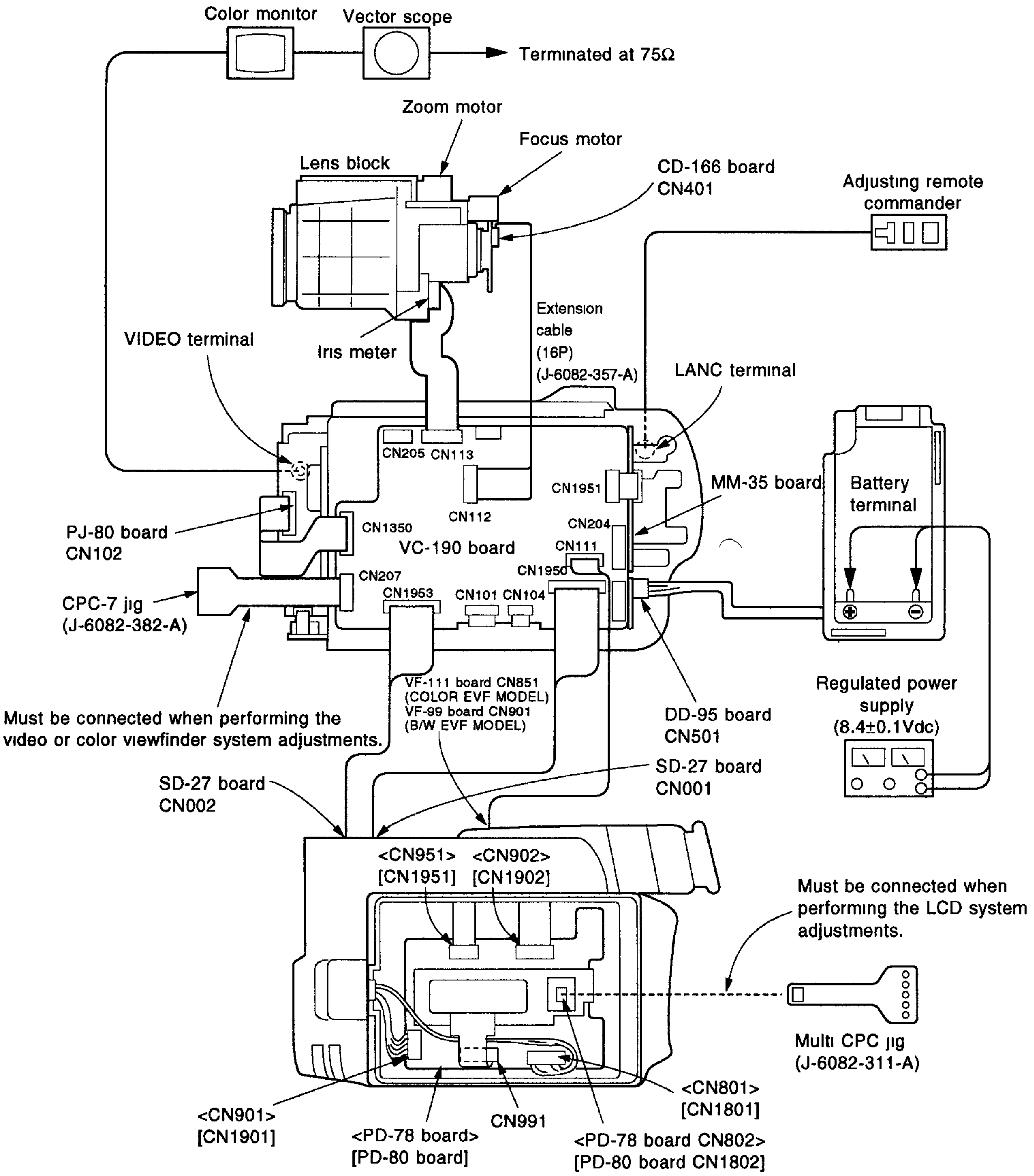


Fig. 5-1-2.

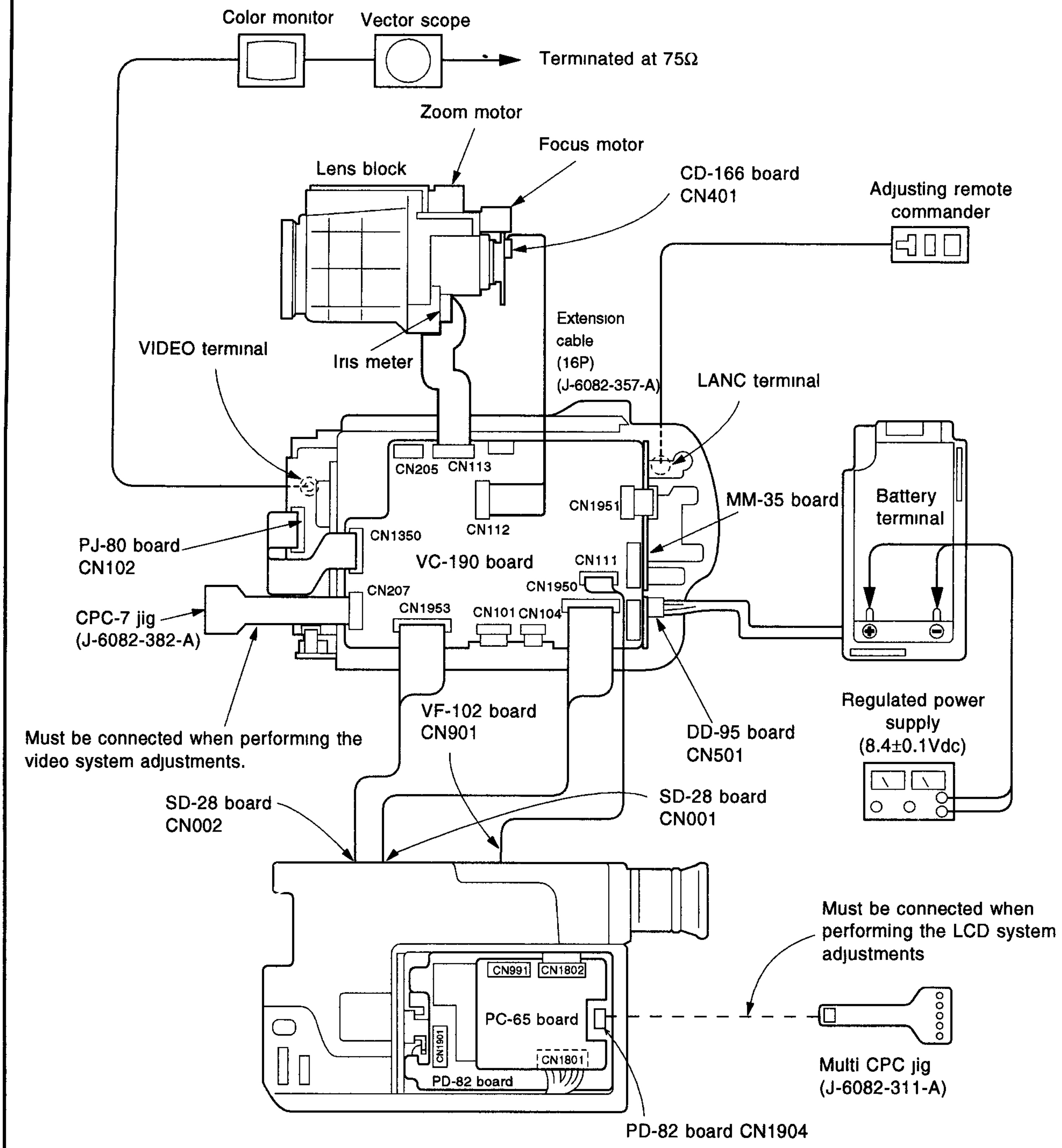
3.5 INCH/4 INCH LCD Model (EXCEPT CCD-TRV64E)


Color monitor
Vector scope
Terminated at 75Ω
Zoom motor
Focus motor
Lens block
CD-166 board
CN401
Adjusting remote
commander
Extension
cable
(16P)
(J-6082-357-A)
VIDEO terminal
Iris meter
LANC terminal
CN205 CN113
CN1951
MM-35 board
Battery
terminal
PJ-80 board
CN102
CN1350
CN112
CN204
VC-190 board
CN111
CN1950
CN207
CN1953
CN101 CN104
CPC-7 jig
(J-6082-382-A)
VF-111 board CN851
(COLOR EVF MODEL)
VF-99 board CN901
(B/W EVF MODEL)
Regulated power
supply
(8.4±0.1Vdc)
Must be connected when performing the
video or color viewfinder system adjustments.
DD-95 board
CN501
SD-27 board
CN002
SD-27 board
CN001
<CN951> <CN902>
[CN1951] [CN1902]
Must be connected when
performing the LCD system
adjustments.
Multi CPC jig
(J-6082-311-A)
<CN801>
[CN1801]
<CN901>
[CN1901]
CN991
<PD-78 board>
[PD-80 board]
<PD-78 board CN802>
[PD-80 board CN1802]

Note : < > : NTSC 4" LCD MODEL (CCD-TRV72/TRV82/TRV94)
[ ] : 3.5" LCD, PAL 4" LCD MODEL (CCD-TRV62/TRV54E/TRV56E/TRV94E)

Fig. 5-1-3.

2.5 INCH LCD Model (CCD-TRV64E)



Color monitor
Vector scope
Terminated at 75Ω
Zoom motor
Focus motor
Lens block
CD-166 board
CN401
Adjusting remote commander
Extension cable (16P) (J-6082-357-A)
VIDEO terminal
Iris meter
LANC terminal
CN205
CN113
CN1951
MM-35 board
Battery terminal
CN112
PJ-80 board
CN102
CN1350
VC-190 board
CN111
CN1950
CN207
CPC-7 jig
(J-6082-382-A)
CN1953
CN101
CN104
VF-102 board
CN901
Regulated power supply
(8.4±0.1Vdc)
DD-95 board
CN501
Must be connected when performing the video system adjustments.
SD-28 board
CN002
SD-28 board
CN001
Must be connected when performing the LCD system adjustments
CN991
CN1802
PC-65 board
CN1901
CN1801
PD-82 board
Multi CPC jig
(J-6082-311-A)
PD-82 board CN1904

Note : 2.5" LCD MODEL (CCD-TRV64E)

Fig. 5-1-4.

1-1-3. Precautions

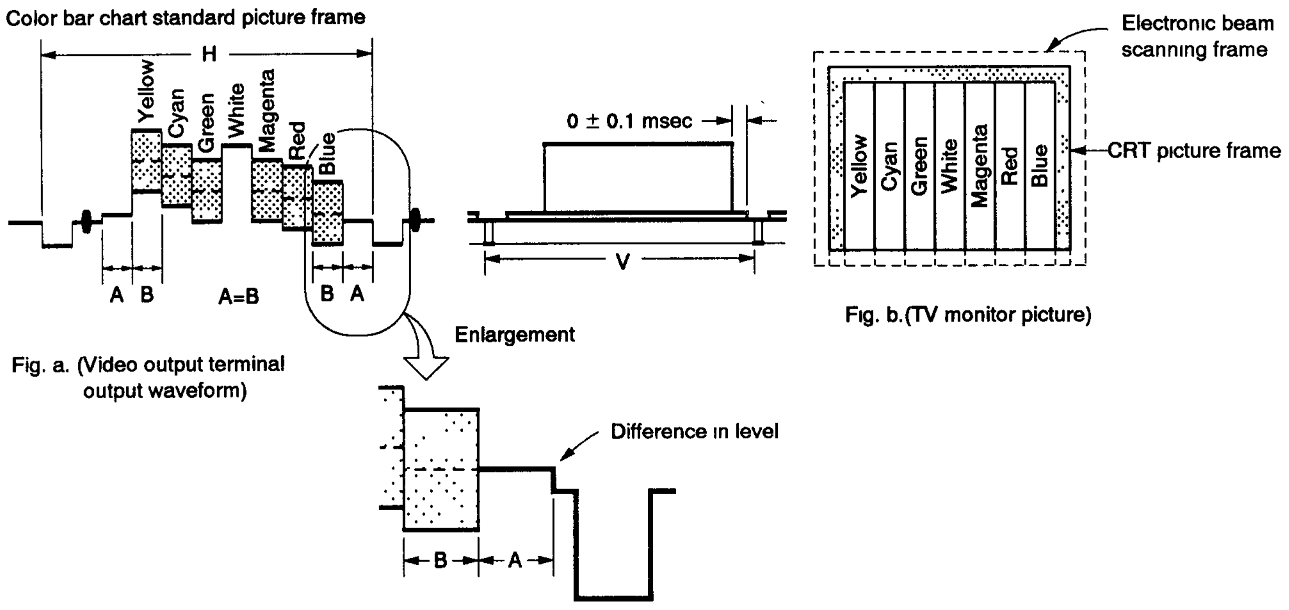
1. Switch settings

Set the switches to the following positions, and adjust with out loading the cassette tape, unless specified otherwise

1. CAMERA/VTR (or PLAYER) switch (Control switch block (PS-6500)) .... CAMERA
2. DEMO MODE switch (Menu display) .... OFF
3. DIGITAL ZOOM switch (Menu display) .... OFF
4. STEADY SHOT switch (Control switch block (SD)) . ... OFF
5. FOCUS switch (Control switch block (MF)) MANUAL
6. PROGRAM AE button (Control switch block (SD)) .. OFF
7. BACK LIGHT button (Control switch block (SD)). OFF
8. 16 : 9 WIDE button (Control switch block (SD)) OFF
9. PICTURE EFECT button (Control switch block (SD)) ... ... OFF
10. DIGITAL EFECT button (Control switch block (SD)) (CCD-TRV94/TRV-94E) . . .. OFF
11. DISPLY (Menu display) . . . . V-OUT/LCD

2. Adjusting Procedure

Adjust in the given order.


Color bar chart standard picture frame
H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A B
A=B
B A
Fig. a. (Video output terminal output waveform)
Enlargement
B
A
Difference in level
0 ± 0.1 msec
V
Electronic beam scanning frame
CRT picture frame
Fig. b.(TV monitor picture)

Adjust the camera zoom and direction to obtain the output waveform shown in Fig. a and the TV monitor display shown in Fig. b.

Fig. 5-1-5.

3. Subject

1) Color bar chart (Standard picture frame)
   Adjust the picture frame as shown in Fig. 5-1-5. if adjustments are performed using the color bar chart. (Standard picture frame)
2) White pattern (Standard picture frame)
   Remove the color bar chart from the pattern box, and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Chart for flange back adjustment
   Combine a white A0 size (1189 mm x 841 mm) paper to a black one, and make the chart shown in Fig 5-1-6

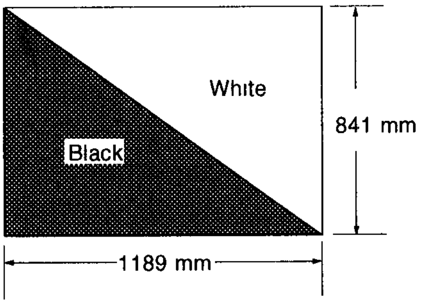

White
Black
841 mm
1189 mm

Fig. 5-1-6.

Note: Use the non-reflecting and non-glazing vellum paper whose size is more than A0, and make the boundary between white and black to be smoothly flat.

1-1-4. Adjusting Remote Commander

The adjusting remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjusting remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC) The resultant data of this bi-directional communication is written in the non-volatile memory

1. Using the adjusting remote commander

1) Connect the adjusting remote commander to the LANC terminal
2) Adjust the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position)

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 5-1-7

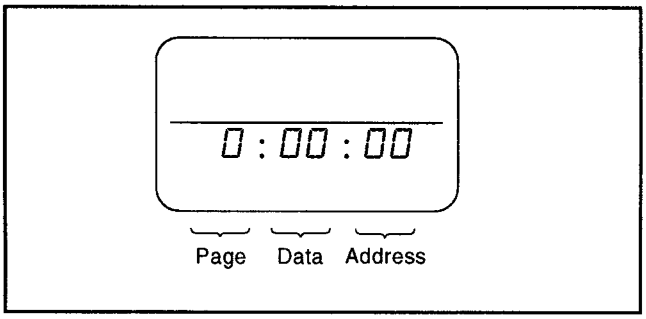


Fig. 5-1-7.

3) Operate the adjusting remote commander as follows
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed There are altogether 16 pages, from 0 to F

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 5-1-1.

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed
     There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (D, E, F page) in the nonvolatile memory.
     (The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed.)
4) Select page: 0, address: 01, and set the data to 01, and enables Page D and E, F to be adjusted
5) After completing all adjustments, set data: 00 to page: 0, address: 01 and turn off the main power supply (8 4V) once

2. Precautions upon using the adjusting remote commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment

1-1-5. Page D Address

Note 1: The ← mark shown in the adjustment data memo column indicates that the address data is fixed and same as the initial value.

Note 2: The initial adjustment data value is the value after "Page D, Page E, Page F Data Initialization" and "Page D Data Modification" have been executed. It is different from the value after all adjustments have been executed.

Note 3: ( ): AEP, UK model
[ ]: E, Australian, Hong Kong, Tourist model
< >: Chinese model

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
00 to 0F									
10	00	00	00	00	00	00	00	00	←
11	02	02	02	03	07	07	(06)<07>	(06)[07]	←
12	7E	7E	7E	7E	86	86	(FC)<FE>	(FC)[FE]	←
13	31	36	36	16	11	31	31	16	←
14	17	17	17	17	17	17	17	17	←
15	01	01	01	F1	01	01	01	F1	←
16	00	00	00	00	00	00	00	00	←
17	0C	0C	0C	0C	0C	0C	0C	0C	←
18	8C	8C	8C	40	0C	0C	(8C)<0C>	(80)[00]	←
19	17	17	17	17	17	17	17	17	←
1A	37	37	37	37	37	37	37	37	←
1B	15	15	15	1F	1B	11	15	1F	←
1C	28	28	28	28	28	28	28	28	←
1D	A5	A5	A5	A1	A1	A1	(E9)<E1>	(A9)[A1]	←
1E	00	00	00	00	00	00	00	00	←
1F	48	48	48	48	45	48	48	48	←
20	00	00	00	01	01	01	(00)<01>	(00)[01]	←
21	30	30	30	80	80	80	(30)<80>	(30)[80]	←
22	00	00	00	00	00	00	00	00	←
23	62	72	82	94	54	56	64	94	←
24	12	12	12	12	12	12	12	12	←
25	64	64	64	64	50	50	50	50	←
26	04	04	04	04	04	04	04	04	←
27	F9	F9	F9	F9	F9	F9	F9	F9	←
28	88	88	88	88	88	88	88	88	
29	8D	8D	8D	8D	8D	8D	8D	8D	
2A	A8	A8	A8	A8	A8	A8	A8	A8	
2B	BD	BD	BD	BD	BD	BD	BD	BD	
2C	C8	C8	C8	C8	C8	C8	C8	C8	
2D	05	05	05	05	05	05	05	05	←
2E	00	00	00	00	00	00	00	00	←
2F	01	01	01	01	01	01	01	01	←
30	05	05	05	05	05	05	05	05	←
31	41	41	41	41	41	41	41	41	←
32	30	30	30	30	30	30	30	30	←
33	CC	CC	CC	CC	CC	CC	CC	CC	←
34	07	07	07	07	07	07	07	07	←
35	88	88	88	88	88	88	88	88	
36	C9	C9	C9	C9	C9	C9	C9	C9	←

Table 5-1-2 (1).

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
37	02	02	02	02	02	02	02	02	←
38	02	02	02	02	02	02	02	02	←
39	04	04	04	04	04	04	04	04	←
3A	0A	0A	0A	0A	0A	0A	0A	0A	←
3B	32	32	32	32	32	32	32	32	←
3C	00	00	00	00	00	00	00	00	←
3D	80	80	80	80	80	80	80	80	←
3E	02	02	04	04	02	03	02	03	←
3F	02	02	02	02	02	02	02	02	←
40		3F	3F	3F				3F	←
41		00	00	00				00	←
42		24	24	24				24	←
43		24	24	24				24	←
44		82	82	82				82	←
45		00	00	00				00	←
46		88	88	88				C8	←
47		67	67	67				67	←
48		A3	A3	A3				A3	
49		A6	A6	A6				A6	
4A		AD	AD	AD				AD	
4B		6F	6F	6F				6F	
4C		93	93	93				93	←
4D		93	93	93				93	←
4E		B0	B0	B0				B0	←
4F		B4	B4	B4				B4	
50		48	48	48				48	
51		40	40	40				40	
52	9A	9A	76	76	9A	84	7C	84	
53	6E	6E	6D	6D	9A	70	70	70	
54	6E	6E	5D	5D	6E	67	70	67	
55	79	79	65	65	79	7D	79	7D	
56	71	71	5B	5B	71	76	71	76	
57	A7	A7	94	94	A7	9B	77	9B	
58	9E	9E	7C	7C	97	80	C0	80	
59	83	83	41	41	83	90	83	90	
5A	7E	7E	67	67	7E	7C	7E	7C	
5B	7C	7C	40	40	7C	7C	7C	7C	
5C	69	69	80	80	88	80	88	80	←
5D	9A	9A	76	76	9A	84	7C	84	
5E	00	00	00	00	72	67	72	67	
5F	69	69	80	80	88	80	88	80	←
60	00	00	00	00	F0	D9	F0	D9	←
61	00	00	00	00	60	59	60	59	←
62	8B	8B	A1	A1	8B	A1	9D	A1	←
63	C0	C0	DA	DA	C0	DA	E3	DA	←

Table 5-1-2 (2).

1-1-6. Page F Address

Note 1: The ← mark shown in the adjustment data memo column indicates that the address data is fixed and same as the initial value.

Note 2: The initial adjustment data value is the value after "Page D, Page E, Page F Data Initialization" and "Page F Data Modification" have been executed It is different from the value after all adjustments have been executed.

Note 3: ( ): AEP, UK model
[ ]: E, Australian, Hong Kong, Tourist model
< >: Chinese model

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
00									
01									
02	03	03	03	04	04	04	(02)<04>	(02)[04]	
03									
04									
05	B4	B4	B4	B4	BA	BA	BA	BA	←
06	B8	B8	B8	B8	B8	B8	B8	B8	←
07	5E	5E	5E	5E	5E	5E	5E	5E	←
08	45	45	45	45	47	47	47	47	←
09	54	54	54	54	58	58	58	58	←
0A	69	69	69	69	6B	6B	6B	6B	←
0B	8A	8A	8A	8A	8E	8E	8E	8E	←
0C									
0D									
0E									
0F									
10	00	00	00	00	00	00	00	00	
11	00	00	00	00	00	00	00	00	
12	00	00	00	00	00	00	00	00	
13	00	00	00	00	00	00	00	00	
14	00	00	00	00	00	00	00	00	
15	00	00	00	00	00	00	00	00	
16	00	00	00	00	00	00	00	00	
17	00	00	00	00	00	00	00	00	
18	00	00	00	00	00	00	00	00	
19	00	00	00	00	00	00	00	00	
1A	00	00	00	00	00	00	00	00	
1B	00	00	00	00	00	00	00	00	
1C	56	76	76	F6	97	17	57	F7	←
1D	08	08	08	08	10	10	10	10	←
1E	23	23	23	23	23	23	23	23	←
1F	52	52	52	52	52	52	52	52	
20	00	00	00	00	02	02	02	02	←
21	02	02	02	02	02	02	02	02	←
22	3B	3B	3B	3B	3B	3B	3B	3B	
23	00	00	00	00	00	00	00	00	←
24	7C	7C	7C	7C	7C	7C	7C	7C	←
25	80	80	80	80	80	80	80	80	←
26	1F	1F	1F	1F	1F	1F	1F	1F	←
27	00	00	00	04	04	04	(00)<04>	(00)[04]	←

Table 5-1-3 (1).

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
28	84	84	84	86	84	80	84	86	←
29	00	00	00	00	00	00	00	00	←
2A	FF	FF	FF	FF	FF	FF	FF	FF	
2B	3B	3B	3B	3B	3B	3B	3B	3B	
2C	7D	7D	7D	7D	7D	7D	7D	7D	
2D	56	56	56	56	56	56	56	56	
2E	00	00	00	00	00	00	00	00	←
2F	00	00	00	00	00	00	00	00	←
30	A6	A6	A6	A6	A6	A6	A6	A6	
31	1A	1A	1A	1A	1A	1A	1A	1A	
32	15	15	15	15	15	15	15	15	
33	24	24	24	24	24	24	24	24	
34	8C	8C	8C	8C	8C	8C	8C	8C	
35	11	11	11	11	11	11	11	11	
36	00	00	00	00	00	00	00	00	
37	0A	0A	0A	0A	0A	0A	0A	0A	
38	00	00	00	00	00	00	00	00	
39	0A	0A	0A	0A	0A	0A	0A	0A	
3A	3C	3C	3C	3C	3C	3C	3C	3C	
3B	A0	A0	A0	A0	A0	A0	A0	A0	
3C	80	80	80	80	80	80	80	80	
3D	80	80	80	80	80	80	80	80	
3E	30	30	30	30	30	30	30	30	
3F	49	49	49	49	49	49	49	49	←
40	1B	1B	1B	1B	1B	1B	1B	1B	
41	1B	1B	1B	1B	1B	1B	1B	1B	
42	AE	AE	AE	AE	AE	AE	AE	AE	
43	42	42	42	42	42	42	42	42	
44	44	44	44	44	44	44	44	44	
45	34	34	34	34	34	34	34	34	
46	2A	2A	2A	2A	2A	2A	2A	2A	
47	89	89	89	89	89	89	89	89	
48	59	59	59	59	59	59	59	59	
49	38	38	38	38	38	38	38	38	
4A	41	41	41	41	41	41	41	41	
4B	25	25	25	25	25	25	25	25	
4C	00	00	00	00	00	00	00	00	
4D	19	19	19	19	19	19	19	19	
4E	00	00	00	00	00	00	00	00	
4F	16	16	16	16	16	16	16	16	
50	52	52	52	52	52	52	52	52	
51	52	52	52	52	52	52	52	52	
52	7A	7A	7A	7A	7A	7A	7A	7A	
53	8D	8D	8D	8D	8D	8D	8D	8D	
54	7A	7A	7A	7A	7A	7A	7A	7A	
55	55	55	55	55	55	55	55	55	←

Table 5-1-3 (2).

Page F Address

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
56	A8	A8	A8	A8	A8	A8	A8	A8	
57	00	00	00	00	00	00	00	00	
58	9A	9A	9A	9A	9A	9A	9A	9A	
59	50	50	50	50	50	50	50	50	←
5A	7B	7B	7B	7B	7B	7B	7B	7B	
5B	B3	B3	B3	B3	B3	B3	B3	B3	
5C	99	99	99	99	AA	AA	AA	AA	←
5D	70	70	70	70	70	70	70	70	←
5E	A8	A8	A8	A8	A2	A2	A2	A2	←
5F	70	70	70	70	70	70	70	70	←
60	D5	D5	D5	D5	D5	D5	D5	D5	
61	D5	D5	D5	D5	D5	D5	D5	D5	
62	EA	EA	EA	EA	EA	EA	EA	EA	
63	EA	EA	EA	EA	EA	EA	EA	EA	
64	8B	8B	8B	8B	80	80	97	97	←
65	80	80	80	80	80	80	8C	8C	←
66	89	89	89	89	80	80	97	97	←
67	80	80	80	80	80	80	8C	8C	←
68	B8	B8	B8	B8	B8	B8	B8	B8	
69	B8	B8	B8	B8	B8	B8	B8	B8	
6A	B1	B1	B1	B1	B1	B1	B1	B1	
6B	B1	B1	B1	B1	B1	B1	B1	B1	
6C	80	80	80	80	80	80	80	80	
6D	80	80	80	80	80	80	80	80	
6E	80	80	80	80	80	80	80	80	
6F	80	80	80	80	80	80	80	80	
70	7D	7D	7D	7D	80	80	80	80	←
71	7D	7D	7D	7D	80	80	80	80	←
72	80	80	80	80	80	80	80	80	
73	80	80	80	80	00	00	00	00	
74	00	00	00	00	00	00	00	00	←
75	80	80	80	80	00	00	00	00	
76	80	80	80	80	00	00	00	00	
77	00	00	00	00	00	00	00	00	←
78	7C	7C	7C	7C	92	92	92	92	←
79	AA	AA	AA	AA	00	00	00	00	←
7A	A0	A0	A0	A0	00	00	00	00	←
7B	C3	C3	C3	C3	00	00	00	00	←
7C	0C	0C	0C	0C	0C	0C	0C	0C	←
7D	18	18	18	18	00	00	00	00	←
7E	77	77	77	77	77	77	77	77	←
7F	40	40	40	40	40	40	40	40	←
80	75	75	75	75	75	75	75	75	←
81	73	73	73	73	73	73	73	73	←
82	12	12	12	12	12	12	12	12	←
83	8A	8A	8A	8A	8A	8A	8A	8A	←

Table 5-1-3 (3).

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
84	A5	A5	A5	A5	A5	A5	A5	A5	←
85	68	68	68	68	68	68	68	68	←
86	4A	4A	4A	4A	4A	4A	4A	4A	←
87	F0	F0	F0	F0	F0	F0	F0	F0	←
88	00	00	00	00	00	00	00	00	←
89	01	01	01	01	01	01	01	01	←
8A	6C	6C	6C	6C	6C	6C	6C	6C	←
8B	40	40	40	40	40	40	40	40	←
8C	68	68	68	68	28	28	28	28	←
8D	A0	A0	A0	A0	60	60	60	60	←
8E	70	70	70	70	40	40	40	40	←
8F	40	40	40	40	29	29	29	29	←
90	68	68	68	68	28	28	28	28	←
91	70	70	70	70	A0	A0	A0	A0	←
92	40	40	40	40	40	40	40	40	←
93	25	25	25	25	25	25	25	25	←
94	58	58	58	58	28	28	28	28	←
95	F0	F0	F0	F0	80	80	80	80	←
96	40	40	40	40	40	40	40	40	←
97	3D	3D	3D	3D	10	10	10	10	←
98	58	58	58	58	28	28	28	28	←
99	FF	FF	FF	FF	FF	FF	FF	FF	←
9A	40	40	40	40	40	40	40	40	←
9B	30	30	30	30	10	10	10	10	←
9C	78	78	78	78	28	28	28	28	←
9D	70	70	70	70	70	70	70	70	←
9E	4C	4C	4C	4C	30	30	30	30	←
9F	06	06	06	06	00	00	00	00	←
A0	28	28	28	28	28	28	28	28	←
A1	FF	FF	FF	FF	E0	E0	E0	E0	←
A2	30	30	30	30	30	30	30	30	←
A3	10	10	10	10	00	00	00	00	←
A4	62	62	62	62	60	60	60	60	←
A5	91	91	91	91	91	91	91	91	←
A6	62	62	62	62	70	70	70	70	←
A7	B2	B2	B2	B2	92	92	92	92	←
A8	62	62	62	62	70	70	70	70	←
A9	91	91	91	91	A2	A2	A2	A2	←
AA	62	62	62	62	70	70	70	70	←
AB	A2	A2	A2	A2	A3	A3	A3	A3	←
AC	04	04	04	04	04	04	04	04	←
AD	E5	E5	E5	E5	D5	D5	D5	D5	←
AE	04	04	04	04	04	04	04	04	←
AF	F7	F7	F7	F7	D6	D6	D6	D6	←
B0	40	40	40	40	40	40	40	40	←
B1	00	00	00	00	00	00	00	00	←

Table 5-1-3 (4).

Page F Address

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
B2	B3	B3	B3	B3	B3	B3	B3	B3	←
B3	B3	B3	B3	B3	B3	B3	B3	B3	←
B4	21	21	21	21	10	10	10	10	←
B5	05	05	05	05	01	01	01	01	←
B6	11	11	11	11	10	10	10	10	←
B7	06	06	06	06	03	03	03	03	←
B8	71	71	71	71	40	40	40	40	←
B9	35	35	35	35	32	32	32	32	←
BA	20	20	20	20	00	00	00	00	←
BB	00	00	00	00	00	00	00	00	←
BC	22	22	22	22	22	22	22	22	←
BD	80	80	80	80	80	80	80	80	←
BE	30	30	30	30	20	20	20	20	←
BF	40	40	40	40	40	40	40	40	←
C0	20	20	20	20	30	30	30	30	←
C1	50	50	50	50	50	50	50	50	←
C2	1B	1B	1B	1B	2C	2C	2B	2B	←
C3	4B	4B	4B	4B	4C	4C	4B	4B	←
C4	00	00	00	00	00	00	00	00	←
C5	00	00	00	00	00	00	00	00	←
C6	00	00	00	00	00	00	00	00	←
C7	CA	CA	CA	CA	BB	BB	BB	BB	←
C8	D9	D9	D9	D9	C8	C8	C8	C8	←
C9	DA	DA	DA	DA	CA	CA	CA	CA	←
CA	00	00	00	00	00	00	00	00	←
CB	CA	CA	CA	CA	BB	BB	BB	BB	←
CC	D9	D9	D9	D9	C8	C8	C8	C8	←
CD	DA	DA	DA	DA	CA	CA	CA	CA	←
CE	00	00	00	00	00	00	00	00	←
CF	27	27	27	27	27	27	27	27	←
D0	CA	CA	CA	CA	CA	CA	CA	CA	←
D1	00	00	00	00	00	00	00	00	←
D2	40	40	40	40	40	40	40	40	←
D3	1B	1B	1B	1B	1B	1B	1B	1B	←
D4	E0	E0	E0	E0	EC	EC	EC	EC	←
D5	A0	A0	A0	A0	A0	A0	A0	A0	←
D6	30	30	30	30	28	28	28	28	←
D7	20	20	20	20	1A	1A	1A	1A	←
D8	C0	C0	C0	C0	C0	C0	C0	C0	←
D9	6A	6A	6A	6A	6A	6A	6A	6A	←
DA	60	60	60	60	60	60	60	60	←
DB	55	55	55	55	55	55	55	55	←
DC	55	55	55	55	55	55	55	55	←
DD	66	66	66	66	96	96	96	96	←
DE	25	25	25	25	25	25	25	25	←
DF	34	34	34	34	34	34	34	34	←

Table 5-1-3 (5).

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
E0	3F	3F	3F	3F	3F	3F	3F	3F	←
E1	A0	A0	A0	A0	A0	A0	A0	A0	←
E2	00	00	00	00	00	00	00	00	←
E3	80	80	80	80	80	80	80	80	←
E4	70	70	70	70	70	70	70	70	←
E5	41	41	41	41	41	41	41	41	←
E6	1F	1F	1F	1F	1F	1F	1F	1F	←
E7	C0	C0	C0	C0	C0	C0	C0	C0	←
E8	14	14	14	14	14	14	14	14	←
E9	03	03	03	03	03	03	03	03	←
EA	00	00	00	00	00	00	00	00	←
EB	FE	FE	FE	FE	FD	FD	FD	FD	
EC	F5	F5	F5	F5	F4	F4	F4	F4	
ED	1A	1A	1A	1A	21	21	21	21	←
EE	33	33	33	33	46	46	46	46	←
EF	FE	FE	FE	FE	FE	FE	FE	FE	←
F0	3C	3C	3C	3C	3C	3C	3C	3C	←
F1	24	24	24	24	24	24	24	24	←
F2	83	83	83	83	83	83	83	83	←
F3	A0	A0	A0	A0	A0	A0	A0	A0	←
F4	67	67	67	67	67	67	67	67	←
F5	4D	4D	4D	4D	4D	4D	4D	4D	←
F6	33	33	33	33	33	33	33	33	←
F7	5C	5C	5C	5C	5C	5C	5C	5C	←
F8	5C	5C	5C	5C	5C	5C	5C	5C	←
F9	5C	5C	5C	5C	5C	5C	5C	5C	←
FA	3C	3C	3C	3C	3C	3C	3C	3C	←
FB	0F	0F	0F	0F	0F	0F	0F	0F	←
FC	10	10	10	10	10	10	10	10	←
FD	2C	2C	2C	2C	2C	2C	2C	2C	←
FE	0A	0A	0A	0A	0A	0A	0A	0A	←
FF	36	36	36	36	36	36	36	36	←

Table 5-1-3 (6).

1-1-7. Page E Address

Note 1: The ←— mark shown in the adjustment data memo column indicates that the address data is fixed and same as the initial value.

Note 2: The initial adjustment data value is the value after "Page D, Page E, Page F Data Initialization" and "Page E Data Modification" have been executed. It is different from the value after all adjustments have been executed.

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
00	42	42	42	42	72	72	72	72	←
01	06	06	06	06	06	06	06	06	←
02	E0	E0	E0	E0	E0	E0	E0	E0	←
03	50	50	50	50	50	50	50	50	←
04	3B	3B	3B	3B	3B	3B	3B	3B	←
05	14	14	14	14	14	14	14	14	←
06	E8	E8	E8	E8	E8	E8	E8	E8	←
07	90	90	90	90	90	90	90	90	←
08	00	00	00	00	00	00	00	00	←
09	02	02	02	02	02	02	02	02	←
0A	F3	F3	F3	F3	F3	F3	F3	F3	←
0B	A0	A0	A0	A0	A0	A0	A0	A0	←
0C	69	69	69	69	69	69	69	69	←
0D	89	89	89	89	89	89	89	89	←
0E	15	15	15	15	15	15	15	15	←
0F	50	50	50	50	50	50	50	50	←
10	5F	5F	5F	5F	5F	5F	5F	5F	←
11	69	69	69	69	69	69	69	69	←
12	93	93	93	93	93	93	93	93	←
13	AA	AA	AA	AA	AA	AA	AA	AA	←
14	65	65	65	65	65	65	65	65	←
15	44	44	44	44	44	44	44	44	←
16	A2	A2	A2	A2	A2	A2	A2	A2	←
17	63	63	63	63	63	63	63	63	←
18	90	90	90	90	90	90	90	90	←
19	33	33	33	33	33	33	33	33	←
1A	15	15	15	15	15	15	15	15	←
1B	82	82	82	82	82	82	82	82	←
1C	00	00	00	00	00	00	00	00	←
1D	F3	F3	F3	F3	F3	F3	F3	F3	←
1E	EE	EE	EE	EE	EE	EE	EE	EE	←
1F	AD	AD	AD	AD	AD	AD	AD	AD	←
20	D9	D9	D9	D9	D9	D9	D9	D9	←
21	20	20	20	20	20	20	20	20	←
22	2A	2A	2A	2A	2A	2A	2A	2A	←
23	EB	EB	EB	EB	EB	EB	EB	EB	←
24	1F	1F	1F	1F	1F	1F	1F	1F	←
25	0F	0F	0F	0F	0F	0F	0F	0F	←
26	31	31	31	31	31	31	31	31	←
27	20	20	20	20	20	20	20	20	←

Table 5-1-4 (1).

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
28	53	53	53	53	53	53	53	53	←
29	41	41	41	41	41	41	41	41	←
2A	F8	F8	F8	F8	F8	F8	F8	F8	←
2B	10	10	10	10	10	10	10	10	←
2C	40	40	40	40	40	40	40	40	←
2D	60	60	60	60	60	60	60	60	←
2E	00	00	00	00	00	00	00	00	←
2F	00	00	00	00	00	00	00	00	←
30	00	00	00	00	00	00	00	00	←
31	10	10	10	10	10	10	10	10	←
32	20	20	20	20	20	20	20	20	←
33	12	12	12	12	12	12	12	12	←
34	3D	3D	3D	3D	3D	3D	3D	3D	←
35	00	00	00	00	00	00	00	00	←
36	00	00	00	00	00	00	00	00	←
37	00	00	00	00	00	00	00	00	←
38	00	00	00	00	00	00	00	00	←
39	00	00	00	00	00	00	00	00	←
3A	00	00	00	00	00	00	00	00	←
3B	20	20	20	20	20	20	20	20	←
3C	26	26	26	26	21	21	21	21	←
3D	27	27	27	27	26	26	24	24	←
3E	08	08	08	08	09	09	09	09	←
3F	09	09	09	09	08	08	08	08	←
40	CC	CC	CC	CC	24	24	20	20	←
41	40	40	40	40	40	40	40	40	←
42	1E	1E	1E	1E	1E	1E	1E	1E	←
43	00	00	00	00	00	00	00	00	←
44	F8	F8	F8	F8	00	00	00	00	←
45	30	30	30	30	22	22	22	22	←
46	10	10	10	10	10	10	10	10	←
47	04	04	04	04	00	00	00	00	←
48	04	04	04	04	04	04	04	04	←
49	F8	F8	F8	F8	F8	F8	F8	F8	←
4A	F8	F8	F8	F8	F8	F8	F8	F8	←
4B	60	60	60	60	60	60	60	60	←
4C	50	50	50	50	50	50	50	50	←
4D	1C	1C	1C	1C	20	20	20	20	←
4E	00	00	00	00	F8	F8	F8	F8	←
4F	48	48	48	48	60	60	60	60	←
50	40	40	40	40	50	50	50	50	←
51	1E	1E	1E	1E	20	20	20	20	←
52	00	00	00	00	F8	F8	F8	F8	←
53	80	80	80	80	80	80	80	80	←

Table 5-1-4 (2).

Page E Address

Address	Adjustment Data								
	Initial Value								Meno Column
	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E	
54	FF	FF	FF	FF	FF	FF	FF	FF	←
55	DD	DD	DD	DD	DD	DD	DD	DD	←
56	B4	B4	B4	B4	B4	B4	B4	B4	←
57	94	94	94	94	94	94	94	94	←
58	74	74	74	74	74	74	74	74	←
59	62	62	62	62	62	62	62	62	←
5A	49	49	49	49	49	49	49	49	←
5B	19	19	19	19	19	19	19	19	←
5C	16	16	16	16	16	16	16	16	←
5D	16	16	16	16	16	16	16	16	←
5E	00	00	00	00	00	00	00	00	←
5F	00	00	00	00	00	00	00	00	←
60	F3	F3	F3	F3	F5	F5	F5	F5	←
61	EB	EB	EB	EB	EB	EB	EB	EB	←
62	00	00	00	00	00	00	00	00	←
63	00	00	00	00	00	00	00	00	←
64	00	00	00	00	00	00	00	00	←
65	00	00	00	00	00	00	00	00	←

Table 5-1-4 (3).

1-1-8. Data Processing

The calculation of the DDS display and the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data Table 5-1-5 indicates the hexadecimal notation-the decimal notation calculation table

Hexadecimal notation-Decimal notation

The lower digits of the hexadecimal notation / The upper digits of the hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	② D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①→ **B (b)**	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: ( ) indicate the adjusting remote control unit display

(Example) In the case that the DDS display and the adjusting remote control unit display are BD (bd).
As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection "189" of the ① and ② in the above table is the decimal notation to be calculated

Table 5-1-5.

1-2. INITIALIZATION OF D, E, F PAGE DATA

1. Initialization of D, E, F Page Data

Note: If the D, E, F page data has been initialized, all adjustments need to be performed again.

Note: < >: NTSC model (CCD-TRV62/TRV72/TRV82/TRV94)
[ ]: PAL model (CCD-TRV54E/TRV56E/TRV64E/TRV94E)

Adjustment page	D
Adjustment address	00 to 63
Adjustment page	F
Adjustment address	00 to FF
Adjustment page	E
Adjustment address	00 to 65

Initializing method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: <55> [51] to page: 2, address: 00.
3) Set data: <55> [51] to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
4) Check that the data of page: 2, address: 02 is 01.
5) Set data: 29 to page: 3, address: 00.
6) Set data: 29 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
7) Set data: 00 to page: 0, address: 01.
8) Perform "Modification of D Page Data".

2. Modification of D Page Data

If the D, E and F page data has been initialized, change the data as shown in the following table by manual input.

Note 1: Before changing the data, set data: 01 to page: 0, address: 01.

Note 2: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the new data.

Note 3: After changing the data, set data: 00 to page: 0, address: 01. Also perform "Modification of F Page Data".

Note 4: ( ): AEP, UK model
[ ]. E, Australian, Hong Kong, Tourist model
< >: Chinese model

Page D Address

Address	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E
10	00	00	00	00	00	00	00	00
11	02	02	02	03	07	07	(06)<07>	(06)[07]
12	7E	7E	7E	7E	86	86	(FC)<FE>	(FC)[FE]
13	31	36	36	16	11	31	31	16
14	17	17	17	17	17	17	17	17
15	01	01	01	F1	01	01	01	F1
16	00	00	00	00	00	00	00	00
17	0C	0C	0C	0C	0C	0C	0C	0C
18	8C	8C	8C	40	0C	0C	(8C)<0C>	(80)[00]
19	17	17	17	17	17	17	17	17
1A	37	37	37	37	37	37	37	37
1B	15	15	15	1F	1B	11	15	1F
1C	28	28	28	28	28	28	28	28
1D	A5	A5	A5	A1	A1	A1	(E9)<E1>	(A9)[A1]
1E	00	00	00	00	00	00	00	00
1F	48	48	48	48	45	48	48	48
20	00	00	00	01	01	01	(00)<01>	(00)[01]
21	30	30	30	80	80	80	(30)<80>	(30)[80]
22	00	00	00	00	00	00	00	00
23	62	72	82	94	54	56	64	94
24	12	12	12	12	12	12	12	12
25	64	64	64	64	50	50	50	50
26	04	04	04	04	04	04	04	04
27	F9	F9	F9	F9	F9	F9	F9	F9
2D	05	05	05	05	05	05	05	05
2E	00	00	00	00	00	00	00	00
2F	01	01	01	01	01	01	01	01
30	05	05	05	05	05	05	05	05
31	41	41	41	41	41	41	41	41
32	30	30	30	30	30	30	30	30
33	CC	CC	CC	CC	CC	CC	CC	CC
34	07	07	07	07	07	07	07	07
36	C9	C9	C9	C9	C9	C9	C9	C9
37	02	02	02	02	02	02	02	02
38	02	02	02	02	02	02	02	02
39	04	04	04	04	04	04	04	04
3A	0A	0A	0A	0A	0A	0A	0A	0A
3B	32	32	32	32	32	32	32	32
3C	00	00	00	00	00	00	00	00
3D	80	80	80	80	80	80	80	80
3E	02	02	04	04	02	03	02	03
3F	02	02	02	02	02	02	02	02
40		3F	3F	3F				3F
42		24	24	24				24
43		24	24	24				24

Table 5-1-6 (1).

Page D Address

Address	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E
45		00	00	00				00
46		88	88	88				
47		67	67	67				67
52	9A	9A	76	76	9A	84	7C	84
53	6E	6E	6D	6D	9A	70	70	70
54	6E	6E	5D	5D	6E	67	70	67
55	79	79	65	65	79	7D	79	7D
56	71	71	5B	5B	71	76	71	76
57	A7	A7	94	94	A7	9B	77	9B
58	9E	9E	7C	7C	97	80	C0	80
59	83	83	41	41	83	90	83	90
5A	7E	7E	67	67	7E	7C	7E	7C
5B	7C	7C	40	40	7C	7C	7C	7C
5C	69	69	80	80	88	80	88	80
5D	9A	9A	76	76	9A	84	7C	84
5E	00	00	00	00	72	67	72	67
5F	69	69	80	80	88	80	88	80
60	00	00	00	00	F0	D9	F0	D9
61	00	00	00	00	60	59	60	59
62	8B	8B	A1	A1	8B	A1	9D	A1
63	C0	C0	DA	DA	C0	DA	E3	DA

Table 5-1-6 (2).

3. Modification of F Page Data

If the D, E and F page data has been initialized, change the data as shown in the following table by manual input

Note 1: Before changing the data, set data: 80 to page: 0, address: 01

Note 2: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the new data.

Note 3: After changing the data, set data: 00 to page: 0, address 01 Also perform "Modification of E Page Data".

Note 4: ( ): AEP, UK model
[ ]: E, Australian, Hong Kong, Tourist model
< >: Chinese model

Address	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E
02	03	03	03	04	04	04	(02)<04>	(02)[04]
05	B4	B4	B4	B4	BA	BA	BA	BA
06	B8	B8	B8	B8	B8	B8	B8	B8
07	5E	5E	5E	5E	5E	5E	5E	5E
08	45	45	45	45	47	47	47	47
09	54	54	54	54	58	58	58	58
0A	69	69	69	69	6B	6B	6B	6B
0B	8A	8A	8A	8A	8E	8E	8E	8E
10	00	00	00	00	00	00	00	00
11	00	00	00	00	00	00	00	00
12	00	00	00	00	00	00	00	00
13	00	00	00	00	00	00	00	00
14	00	00	00	00	00	00	00	00
15	00	00	00	00	00	00	00	00
16	00	00	00	00	00	00	00	00
17	00	00	00	00	00	00	00	00
18	00	00	00	00	00	00	00	00
19	00	00	00	00	00	00	00	00
1A	00	00	00	00	00	00	00	00
1B	00	00	00	00	00	00	00	00
1C	56	76	76	F6	97	17	57	F7
1D	08	08	08	08	10	10	10	10
21	02	02	02	02	02	02	02	02
27	00	00	00	04	04	04	(00)<04>	(00)[04]
28	84	84	84	86	84	80	84	86
5D	70	70	70	70	70	70	70	70
5F	70	70	70	70				
64	8B	8B	8B	8B			97	97
65							8C	8C
66	89	89	89	89			97	97
67							8C	8C
70	7D	7D	7D	7D			80	80
71	7D	7D	7D	7D			80	80
73	80	80	80	80				
75	80	80	80	80				

Table 5-1-7 (1).

Page F Address

Address	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E
76	80	80	80	80				
8D	A0	A0	A0	A0				
8F	40	40	40	40				
91					A0	A0	A0	A0
93	25	25	25	25				
95	F0	F0	F0	F0				
97	3D	3D	3D	3D				
99	FF	FF	FF	FF				
9A	40	40	40	40				
9B	30	30	30	30				
A1	FF	FF	FF	FF				
A2	30	30	30	30				
A3	10	10	10	10				
A7	B2	B2	B2	B2				
B9	35	35	35	35				
BE	30	30	30	30				
C2	1B	1B	1B	1B	2C	2C	2B	2B
C3	4B	4B	4B	4B	4C	4C	4B	4B
D4	E0	E0	E0	E0	EC	EC	EC	EC
DD					96	96	96	96
EB	FE	FE	FE	FE	FD	FD	FD	FD
EC	F5	F5	F5	F5	F4	F4	F4	F4
ED	1A	1A	1A	1A	21	21	21	21
EE					46	46	46	46

Table 5-1-7 (2).

4. Modification of E Page Data

If the D, E and F page data has been initialized, change the data as shown in the following table by manual input.

Note 1: Before changing the data, set data: 01 to page: 0, address: 01.

Note 2: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the new data.

Note 3: After changing the data, set data: 00 to page: 0, address: 01. Also perform all adjustments of this unit.

Address	CCD-TRV62	CCD-TRV72	CCD-TRV82	CCD-TRV94	CCD-TRV54E	CCD-TRV56E	CCD-TRV64E	CCD-TRV94E
00					72	72	72	72
3D					26	26	24	24
40	CC	CC	CC	CC	24	24	20	20
44					00	00	00	00
47					00	00	00	00
4B	60	60	60	60				
4C	50	50	50	50	50	50	50	50
4D	1C	1C	1C	1C				
4F	48	48	48	48				
50	40	40	40	40	50	50	50	50
51	1E	1E	1E	1E				

Table 5-1-8.

1-3. CAMERA SYSTEM ADJUSTMENT

Before perform the camera system adjustments, Check that the specified values of "28 MHz Origin Oscillation Adjustment" , "Y OUT Level Adjustment" and "C OUT Level Adjustment" of "VIDEO SYSTEM ADJUSTMENT" are satisfied

1. HALL Adjustment

For detecting the position of the lens iris, adjust the hall AMP gain and hall offset.

Subject	Not required
Measurement Point	DDS display of EVF or monitor TV
Measuring Instrument	
Adjustment Page	F
Adjustment Address	3C, 3D
Specified Value	13 to 17 during IRIS OPEN (Note 1) 7C to 80 during IRIS CLOSE (Note 2)

Note 1: Set data: 01 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.

Note 2: Set data: 03 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 03 to page: 0, address: 03.
3) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
4) Set data: 03 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
5) Set data: 80 to page: F, address: 3D, and press the PAUSE button of the adjusting remote commander.
6) Set data: 40 to page: F, address: 3C, and press the PAUSE button of the adjusting remote commander.
7) Read the DDS display data (the bottom two digits of the display data at the bottom right of the EVF or the monitor TV display), and this data is named W_2.
8) Set data: 30 to page: F, address: 3C, and press the PAUSE button of the adjusting remote commander.
9) Read the DDS display data, and this data is named W_1.
10) Set data: 01 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
11) Read the DDS display data, and this data is named K_1.
12) Set data: 40 to page: F, address: 3C, and press the PAUSE button.
13) Read the DDS display data, and this data is named K_2.
14) Convert W_1, W_2, K_1, K_2 to decimal notation, and obtain W_1', W_2', K_1', K_2'. (Refer to Table 5-1-5. "Hexadecimal notation-decimal notation conversion table".)
15) Calculate X_1' using the following equations (decimal notation calculation).

    $A' = W_2' + K_1' - W_1' - K_2'$ .... Equation 1

    $B' = W_1' - K_1'$ .... Equation 2

    $X_1' = \dfrac{1680 + (48 \times A') - (16 \times B')}{A'}$ ... . Equation 3
16) Convert X_1' to hexadecimal notation, and obtain X_1. (Round off to one decimal place)
17) Set data: X_1 to page: F, address: 3C, and press the PAUSE button of the adjusting remote commander.
18) Change the data of page: F, address: 3D, and adjust the DDS display data to "15".
19) Press the PAUSE button of the adjusting remote commander.
20) Set data: 03 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
21) Read the DDS display data, and this data is named W_0. If W_0 lies within the "7C" to "80" range, perform "Processing after completing adjustments". If it lies outside the range, perform the following adjustments.
22) Convert W_0 to decimal notation, and obtain W_0'.
23) Calculate X_2' using the following equations (decimal notation calculation).

    $C' = W_0' - B' - 21$ .... Equation 4

    $X_2' = \dfrac{(105 - B') \times (X_1' - 48) + (48 \times C')}{C'}$ ... Equation 5

    (X_1' and B' are values obtained from equations 2 and3)
24) Convert X_2' to hexadecimal notation and obtain X_2. (Round off to one decimal place)
25) Set data X_2 to page: F, address: 3C, and press the PAUSE button of the adjusting remote commander.
26) Change the data of page: F, address: 3D, and adjust the DDS display data to "7E".
27) Press the PAUSE button of the adjusting remote commander.
28) Set data: 01 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
29) Check that the DDS display data lies within the "13" to "17" range.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 0, address: 03.
4) Set data: 00 to page: 0, address: 01.

2. G-CAM flip Discrimination Adjustment

Sets the color reproduction conditions to optimum.

Subject	Random
Measuring point	Display data of page 1 of the adjusting remote commander (Note 1)
Measuring instrument	
Adjusting page	F
Adjusting address	1F
Specified value	S1≧S2

Note 1: Displayed data of page 1 of the adjusting remote commander

1 : XX : XX
→ S2
→ S1

Adjusting method

1) Set data: 01 to page: 0, address: 01.
2) Set data: 16 to page: 0, address: 03.
3) Select page 1 of the adjusting remote commander, and compare the higher 2 digits (S1) and lower 2 digits (S2) of the 4-digit display data.
   [When S1<S2]
   Perform steps 4 onwards.
   [When S1≧S2]
   Perform steps 5 onwards.
4) Read the data of page: F, address: 1F, change the data according to the value read as shown in the following table, and press the PAUSE button of the adjusting remote commander.

Data Before Changing	Data After Changing
52	D2
D2	52

5) Set data: 00 to page: 0, address: 03.
6) Set data: 00 to page: 0, address: 01.

3. Flange Back Adjustment

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

3-1. Flange Back Adjustment (1)

Subject	Flange back adjustment chart (2.0m from the front of the lens) (Luminance: 200 ± 50 lux)
Measurement Point	Check operations on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	30 to 35, 4B to 4F

Adjusting method:

1) Check that at both the zoom lens TELE terminal and WIDE terminal, the center of the chart for the flange back adjustment and center of the exposure screen coincide.
2) Set data: 01 to page: 0, address: 01.
3) Check that the data of page: F, address: 30 to 35, 4B to 4F is the initial value (see table below).

Address	Data	Address	Data
30	A6	4B	25
31	1A	4C	00
32	15	4D	19
33	24	4E	00
34	8C	4F	16
35	11		

4) Check that the data of page: 2, address: 02 is 00.
5) Set data: 13 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 15 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
   (The adjustment data will be automatically input to page: F, address: 30 to 35, 4B to 4F.)
7) Check that the data of page: 2, address: 02 is “01”.

Processing after Completing Adjustments

1) Turn OFF the main power supply (8.4V)
2) Perform “Flange Back Adjustment (2)”.

3-2. Flange Back Adjustment (2)

Perform this adjustment after performing "Flange Back Adjustment (1)".

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Adjustment Page	F
Adjustment Address	30 to 35, 4B to 4F

Adjusting method:

1) Set the IRIS to open. (Use a ND filter)
2) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away (subjects with clear contrast such as buildings, etc.). (Nearby subjects less than 500 m away should not be in the screen.)
3) Set data: 01 to page: 0, address: 01.
4) Check that the data of page: 2, address: 02 is "00".
5) Set data: 13 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 29 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
   (Adjustment data will automatically be input to page: F, addresses: 30 to 35, 4B to 4F.)
7) Check that the data of page: 2, address: 02 is "01".

Processing after Completing Adjustments

1) Set data: 00 to page: 0, address: 01.
2) Turn OFF the main power supply (8.4V).
3) Perform "Flange Back Check".

4. Flange Back Check

Subject	Siemens star (2.0m from the front of the lens Luminance: approx. 200 lux)
Measurement Point	Check the operation on the TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Checking method:

1) Place the Siemens star 2.0m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appears on the image.
3) Set data: 02 to page: 2, address: 40.
4) Set data: 01 to page: 2, address: 41.
5) Shoot the siemens star with the zoom TELE end.
6) Turn on the auto focus.
7) Check that the lens is focused (Note 1), and turn off the auto focus
8) Set data: 10 to page: 2, address: 21.
9) Shoot the siemens star with the zoom WIDE end.
10) Check that the lens is focused.

Note 1: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on page 1 of the adjusting remote commander.
1) Set data: 0F to page: 0, address: 03.
2) Page 1 shows the state of the focus.

1 : 00 : XX
→ (Odd: Focused
Even: Unfocused)

Processing after Completing Adjustments

1) Set data: 00 to page: 2, address: 21.
2) Set data: 00 to page: 0, address: 03.
3) Set data: 00 to page: 2, address: 40.
4) Set data: 00 to page: 2, address: 41.

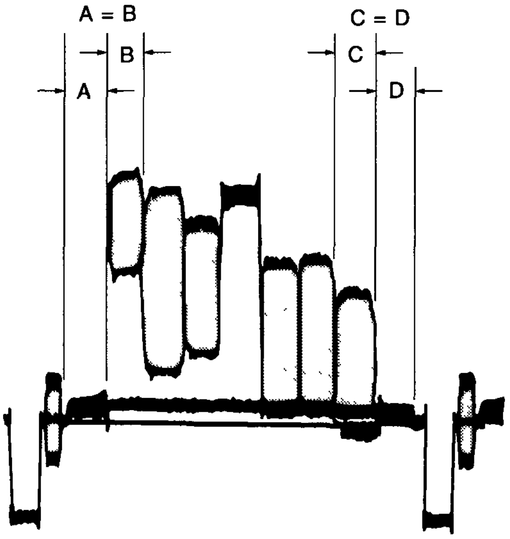
5. Picture Frame Setting

Subject	Color bar chart standard picture frame (1.5m from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor.
Specified Value	A = B, C = D, t = 0 ± 0.1 msec

Setting method:

1) Adjust the zoom and the camera direction, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using "color bar chart standard picture frame".

1. horizontal period



2. Vertical period

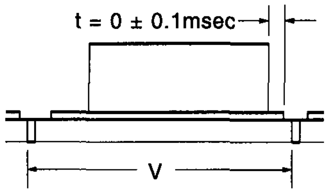


Fig. 5-1-8.

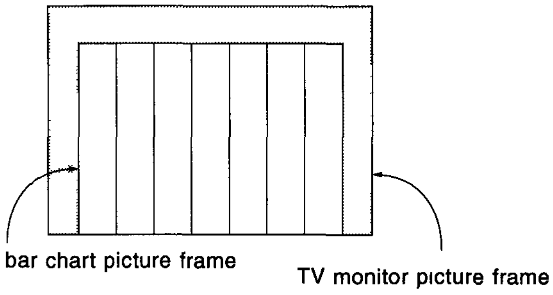

Color bar chart picture frame
TV monitor picture frame

Fig. 5-1-9.

6. Color Reproduction Adjustment

Adjust the color separation matrix coefficient so that the proper color reproduction is produced.

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	41, 43, EB, EC
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: NTSC model:
CCD-TRV62/TRV72/TRV82/TRV94
PAL model:
CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjusting method:

1) Set data: 01 to page: 0, address: 01
2) Set data: 3D to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 3F to page: F, address: 22, and press the PAUSE button of the adjusting remote commander
4) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame
5) Change the data of addresses 41, 43, EB and EC of page: F, and settle each color luminance point in each color reproduction frame

   Note 1: Be sure to press the PAUSE button of the adjusting remote commander before changing the addresses If not, the new data will not be written to the memory
6) Press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

1) Set data: 00 to page: 2, address: 01 and press the PAUSE button of the adjusting remote commander
2) Set data: 00 to page: 0, address: 01

For NTSC model

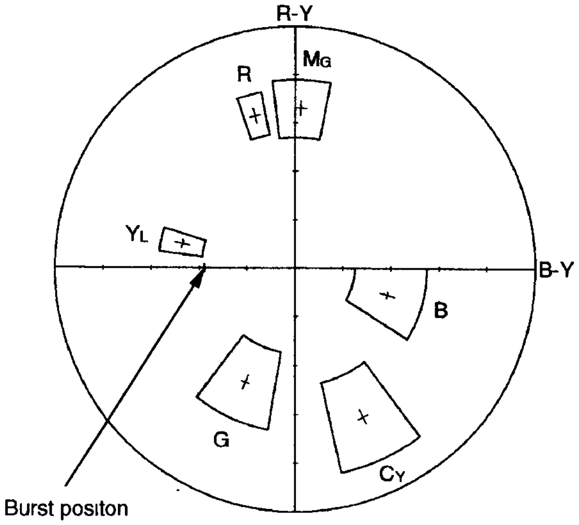


Fig. 5-1-10.

For PAL model

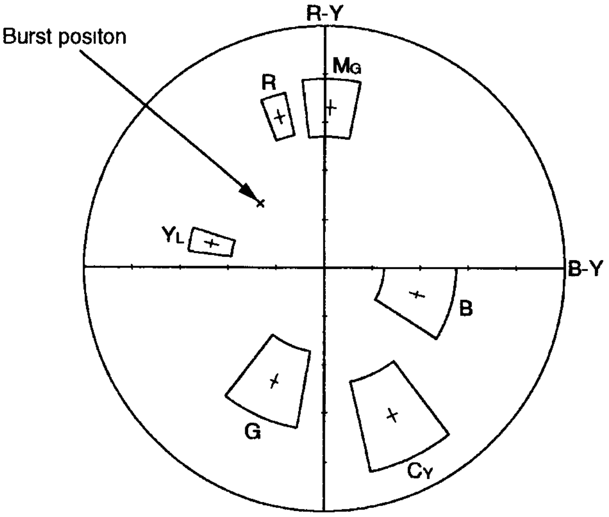


Fig. 5-1-11.

7. IRIS IN/OUT Adjustment

For the unit to judge if the white balance is indoors or outdoors in auto white balance operations, measure the light level and write it in the EEPROM.

If the level is not correct, the white balance will not be accurate.

Subject	Clear chart (Color bar standard picture frame)
Measurement Point	DDS display of EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	49, 4A

Switch setting:

1) STEADY SHOT switch .... OFF

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 06 to page: 0, address: 03.
3) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
4) Set data: 02 to page: 2, address: 40.
5) Set data: 0B to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Read the DDS display data (Note 1), and take the upper two digits as D1 and the lower two as D2.
7) Convert D1 to a decimal number and obtain D1′. (Refer to Table 5-1-5. "Hexadecimal Notation-Decimal Notation Conversion Table".)
8) Calculate D3′ using the following equations. (Equations 1 and 2 are for decimal notation calculation)
   When D2 ≧ D0
   D3′ = D1′ − 21 .... Equation 1
   When D2 < D0
   D3′ = D1′ − 22 .... Equation 2
9) Convert D3′ to a hexadecimal number and obtain D3.
10) Set D3 to page: F, address: 49, and press the PAUSE button of the adjusting remote commander.
11) Set data: 09 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
12) Read the DDS display data (Note 1), and take the upper two digits as D4 and the lower two as D5.
13) Convert D4 to a decimal number and obtain D4′. (Refer to Table 5-1-5. "Hexadecimal Notation-Decimal Notation Conversion Table".)
14) Calculate D6′ using the following equations. (Equations 3 and 4 are for decimal notation calculation)
   When D5 ≧ F0
   D6′ = D4′ − 13 .... Equation 3
   When D5 < F0
   D6′ = D4′ − 14 .... Equation 4
15) Convert D6′ to a hexadecimal number and obtain D6.
16) Set D6 to page: F, address: 4A, and press the PAUSE button of the adjusting remote commander.

Note 1: The right four digits of the display data at the right bottom side of the EVF and monitor TV is the LIGHT LEVEL data. If the lower digits change severely and cannot be read, record it on a tape once, play it back by frame feeding, and obtain the average value.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 2, address: 40.
4) Set data: 00 to page: 0, address: 03.
5) Set data: 00 to page: 0, address: 01.

8. MAX GAIN Adjustment

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	Clear chart (Color bar standard picture frame)
Measurement Point	DDS display of EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	3E
Specified Value	NTSC model: B0 to B8 PAL model. B6 to BE

Note 1: NTSC model:
CCD-TRV62/TRV72/TRV82/TRV94
PAL model:
CCD-TRV54E/TRV56E/TRV64E/TRV94E

Switch setting:
1) STEADY SHOT switch .... OFF

Adjusting method:
1) Set data: 01 to page: 0, address: 01
2) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
3) Set data: 01 to page: 0, address: 03.
4) Set data: 02 to page: 2, address: 40.
5) Set data: 40 to page: 2, address: 56.
6) Set data: 19 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
7) Change the data of page: F, address: 3E and adjust so that the DDS display data (Note 2) lies within the specified value.
8) Press the PAUSE button of the adjusting remote commander.

Note 2: The right two digits of the display data at the right bottom side of the EVF and monitor TV is the object data. If the data change severely and cannot be read, record it on a tape once, play it back by frame feeding, and obtain the avarage value.

Processing after Completing Adjustments
1) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 2, address: 40.
4) Set data: 00 to page: 2, address: 56.
5) Set data: 00 to page: 0, address: 03.
6) Set data: 00 to page: 0, address: 01.

9. Auto White Balance Standard Data Input

Subject	Clear chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	2A to 2D

Note 1: Perform "Color Reproduction Adjustment" before this adjustment.

Note 2: Check that the data of page: 2, address: 02 is 00. If not, turn the power of the unit OFF/ON.

Adjusting method:
1) Set data: 01 to page: 0, address: 01.
2) Wait for 2 seconds.
3) Set data: 11 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
4) Set data: 0D to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
(When the standard data is taken in, the data will be automatically input to addresses 2A to 2D of page F.)
5) Check that the data of page: 2, address: 02 is 01.
6) Perform "Auto White Balance Adjustment".

Processing after Completing Adjustments
1) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 0, address: 01.

10. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color bar standard picture frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Check with the DDS display on the EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	47, 48
Specified Value	R ratio: 2B40 to 2BC0 B ratio: 5E40 to 5EC0

Adjusting method:

1) Place the C14 filter for color temperature correction on the lens.
2) Set data: 01 to page: 0, address: 01.
3) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
4) Set data: 3F to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander
5) Set data: 04 to page: 0, address: 03.
6) Change the data of page: F, address: 47, and adjust the average value of the DDS display data (the display data at the bottom right of the EVF or the TV monitor) to the R ratio specified value
7) Press the PAUSE button of the adjusting remote commander.
8) Set data: 05 to page: 0, address: 03
9) Change the data of page: F, address: 48, and adjust the average value of the DDS display data to the B ratio specified value.
10) Press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander
2) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander
3) Set data: 00 to page: 0, address: 03.
4) Set data: 00 to page: 0, address: 01

11. White Balance Check

Subject	Clear chart (Color bar standard picture frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.3
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-12. A to C

Checking method:

1) Check that the lens is not covered with either filter.
2) Set data: 0F to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Check that the center of the white luminance point is within the circle shown in Fig. 5-1-12.A
4) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander
5) Set data: 23 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander
6) Place the C14 filter on the lens
7) Check that the center of the white luminance point settles in the circle shown in Fig. 5-1-12 B
8) Remove the C14 filter, and place the ND filter 1 3 (1.0+0.3) on the lens.
9) Check that the center of the white luminance point settles in the circle shown in Fig 5-1-12. C.

Processing after Completing Adjustments

1) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander

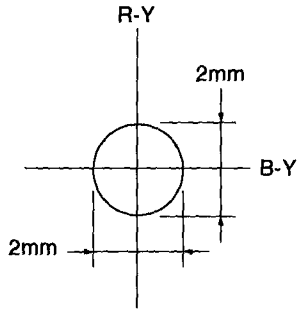

R-Y
2mm
B-Y
2mm

Fig. 5-1-12. A

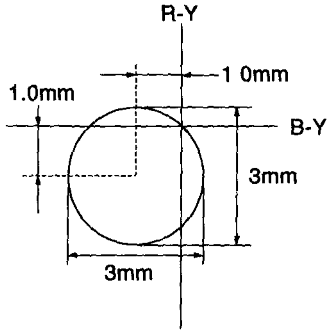

R-Y
1.0mm
1 0mm
B-Y
3mm
3mm

Fig. 5-1-12. B

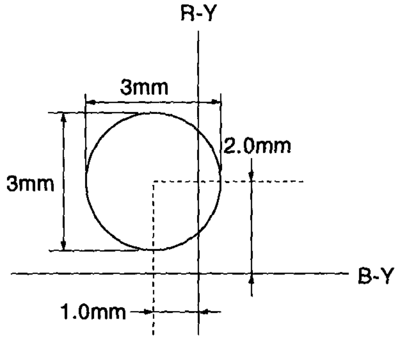

R-Y
3mm
3mm
2.0mm
B-Y
1.0mm

Fig. 5-1-12. C

12. Velocity Sensor Sensitivity Adjustment

- This adjustment is performed only when replacing the velocity sensor
  Although this adjustment need not be performed when the circuit is damaged, etc., check the operations
- Note down the sensitivity displayed on the velocity sensor of the repair parts. At this time, note down also to which board it was attached to
  Be sure to check because if attached incorrectly, the screen will vibrate up and down or left and right during hand-shake correction operations

Precautions on Parts Replacement

There are two types of repair parts-ENC05EA and ENC05EB Replace the broken sensor with a same type of sensor If ENC05EA and ENC05EB are attached correctly, the screen will vibrate up and down or left and right during hand-shake correction operations. After replacing, re-adjust according to the adjusting method after replacement

Precautions on Velocity Sensor

The sensor incorporates a precision oscillator Handle it with care as if it is dropped, the the balance of the oscillator will be disrupted and operations will not be performed properly

Adjusting page	F
Adjusting address	50, 51

Note: The sensor sensitivity of SE451 and SE452 of the SE-61 board is written only on the repair parts

Adjusting method·

1) Set data: 01 to page: 0, address: 01
2) Read the sensor sensitivity written on SE452 of the SE-61 board, and this data is named S_{452}.
3) Read the sensor sensitivity written on SE451 of the SE-61 board, and this data is named S_{451}.
4) Calculate D_{50}' and D_{51}' using the following equation (decimal calculation)
   NTSC model (CCD-TRV62/TRV72/TRV82/TRV94)
   $$D_{50}' = \frac{135}{S_{452}}$$
   $$D_{51}' = \frac{130}{S_{451}}$$
   PAL model (CCD-TRV54E/TRV56E/TRV64E/TRV94E)
   $$D_{50}' = \frac{180}{S_{452}}$$
   $$D_{51}' = \frac{146}{S_{451}}$$
5) Convert D_{50}' and D_{51}' into hexadecimal digits, to obtain D_{50} and D_{51}. (Round off decimal points)
6) Set data. D_{50} to page: F, address: 50, and press the PAUSE button of the adjusting remote commander
7) Set data D_{51} to page: F, address: 51, and press the PAUSE button of the adjusting remote commander

Processing after Completing Adjustments

1) Set data· 00 to page: 0, address: 01
2) Check that the hand-shake correction operations have been performed normally

1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT (COLOR EVF model : CCD-TRV72/TRV82/TRV94/TRV94E)

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the VF PW-SAVE (Menu display) to "OFF" position, unless specified otherwise.

[Adjusting connector]

Most of the measuring points for adjusting the view-finder are concentrated in CN207 of the VC-190 board.

Connect the measuring instruments via the CPC-7 jig (J-6082-382-A).

The following table shows the Pin No. and signal name of CN207.

Pin No.	Signal name	Pin No.	Signal name
1	PB PCM RF	9	EZ I/O
2	REC RF	10	EVF UNREG (–)
3	RF SWP	11	EVF UNREG
4	CAP FG	12	EVF VG
5	REG GND	13	VCO
6	PB RF	14	BPF MON
7	RF AGC IN	15	RF AGC OUT
8	REC AFM	16	AFC FO

Table 5-1-9.

[Power Supply Voltage]

Adjust the power supply voltage so that the battery terminal voltage becomes 8.4 ± 0.1 Vdc .

1. EVF Initial Data Input

Mode	Camera
Subject	Arbitrary
Adjustment Page	D
Adjustment Address	40 to 51

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Select page: D, and input the data in the following table.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
3) Set data: 00 to page: 0, address: 01.

Note : NTSC model : CCD-TRV72/TRV82/TRV94
PAL model : CCD-TRV94E

Address	Data	Remark
40	3F	Fixed value
41	00	Fixed value
42	24	Fixed value
43	24	Fixed value
44	82	Fixed value
45	00	Fixed value
46	88 (NTSC), C8 (PAL)	Fixed value
47	67	Fixed value
48	A3	
49	A6	
4A	AD	
4B	6F	
4C	93	Fixed value
4D	93	Fixed value
4E	B0	Fixed value
4F	B4	
50	48	
51	40	

Table 5-1-10.

2. VCO Adjustment (VF-112 board)

Set the VCO freerun frequency If deviated, the EVF screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement point	Pin ⑬ of CN207 (VCO) on VC-190 board
Measuring instrument	Oscilloscope (DC range)
Adjustment page	D
Adjustment address	4F
Specified value	A = 1.8 ± 0.1Vdc

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Check the GND level of the oscilloscope
3) Change the data of page: D, address: 4F, and set the PCO output voltage (A) to the specified value
4) Press the PAUSE button of the adjusting remote commander
5) Set data: 00 to page: 0, address: 01.

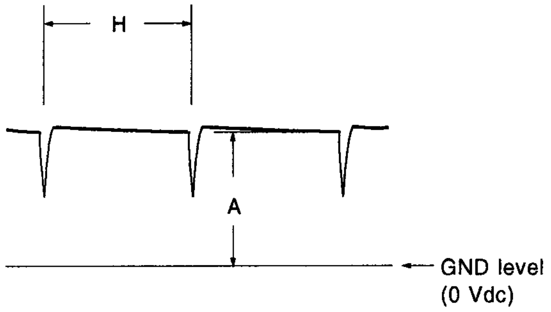


Fig. 5-1-13.

3. Bright Adjustment (VF-112 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement point	Pin ⑫ of CN207 (EVF VG) on VC-190 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	48
Specified value	A = 7.1 ± 0.1 V

Connection:

1) Connect Pin ⑫ and Pin ⑤ (GND) of CN207 with a 3.3 kΩ resistor.
   3.3 kΩ resistor: 1-249-423-11

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Input the following data to page: D, address: 40 to 45
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	40	41	42	43	44	45
Data	00	00	00	00	00	00

3) Change the data of page: D, address: 48, and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
4) Press the PAUSE button of the adjusting remote commander
5) Input the following data to page: D, address: 40 to 45.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data

Address	40	41	42	43	44	45
Data	3F	00	24	24	82	00

6) Set data: 00 to page: 0, address: 01.

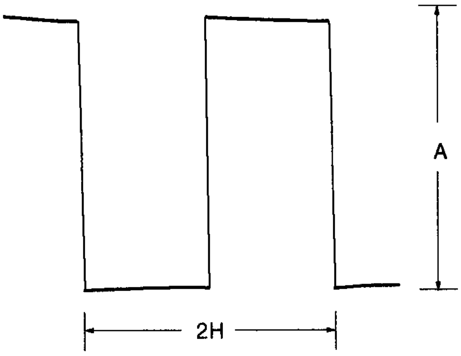


Fig. 5-1-14.

4. Contrast Adjustment (VF-112 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish)

Mode	Camera
Subject	Arbitrary
Measurement point	Pin ⑫ of CN207 (EVF VG) on VC-190 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	4B
Specified value	A = 1.50 ± 0.1V (NTSC) A = 1.40 ± 0.1V (PAL)

Connection:

1) Connect Pin ⑫ and Pin ⑤ (GND) of CN207 with a 3.3 kΩ resistor.
   3.3 kΩ resistor: 1-249-423-11

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Input the following data to page: D, address: 40 to 45
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data

Address	40	41	42	43	44	45
Data	00	27	00	00	00	00

3) Change the data of page: D, address: 4B, and set the voltage (A) between white 50% and the pedestal to the specified value
4) Press the PAUSE button of the adjusting remote commander
5) Input the following data to page: D, address: 40 to 45
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data

Address	40	41	42	43	44	45
Data	3F	00	24	24	82	00

6) Set data: 00 to page: 0, address: 01

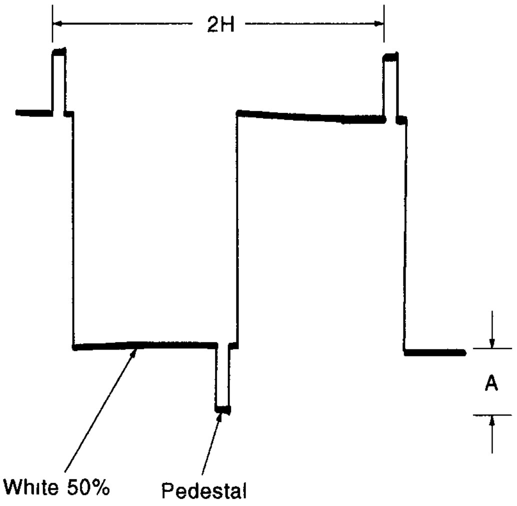


Fig. 5-1-15.

5. Backlight Consumption Current Adjustment (VF-111 board)

Set the backlight luminance and color temperature.
If deviated, the image may become dark or bright.

Mode	Camera
Subject	Arbitrary
Measurement point	+ Probe: Pin ⑪ of CN207 (EVF UNREG) on VC-190 board – Probe: Pin ⑩ of CN207 (EVF UNREG(–)) on VC-190 board
Measuring instrument	Digital voltmeter
Adjustment page	D
Adjustment address	50
Specified value	A = 20.0 ± 1.0 mVdc

Note: Adjust 30 seconds after running on the power supply.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Adjust the power supply voltage so that the voltage of Pin ⑪ of CN207 (EVF UNREG) on VC-190 board is 6.00 ± 0.05 Vdc
3) Change the data of page: D, address: 50, and set the voltage difference (A) between Pin ⑪ of CN207 (EVF UNREG) and Pin ⑩ of CN207 (EVF UNREG(–)) to the specified value.
4) Press the PAUSE button of the adjusting remote commander
5) Set data: 00 to page: 0, address: 01.

6. White Balance Adjustment (VF-112 board)

Correct the white balance.

If deviated, the reproduction of the EVF screen may degenerate.

Mode	Camera
Subject	Arbitrary
Measurement point	Check on EVF screen
Measuring instrument	
Adjustment page	D
Adjustment address	49, 4A
Specified value	The EVF screen should not be colored.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Input the following data to page: D, address: 40 to 45.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	40	41	42	43	44	45
Data	00	27	00	00	00	00

3) Set the data of page: D, address: 49 and 4A to the initial value.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	49	4A
Data	A6	AD

4) Check that the EVF screen is not colored. If colored, change the data of page: D, address· 49 and 4A so that the EVF screen is not colored.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
5) Input the following data to page: D, address: 40 to 45.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	40	41	42	43	44	45
Data	3F	00	24	24	82	00

6) Set data: 00 to page: 0, address: 01.

7. AUTO ON Level Adjustment (VF-111 board)

Adjust the power save sensor, and maintain at the level at which the backlight is AUTO ON.

Mode	Camera
Subject	Arbitrary
Measurement point	Check that the backlight lights up
Measuring instrument	
Adjustment page	D
Adjustment address	51
Specified value	AUTO OFF distance: Above 10 cm, less than 15 cm (Note2) AUTO ON distance: Above 9 cm, less than 11 cm (Note2)

Note 1: Do not perform this adjustment in strong light or under lights.

Note 2: The specified value is the adjustment value during adjustment. The specified value during operation check is as follows

AUTO OFF distance: Above 9 cm, less than 15 cm
AUTO ON distance: Above 7 cm, less than 13 cm

Switch setting:

1) Set the "VF PW-SAVE" on the menu display to "ON".

Adjustment preparation:

1) Prepare a 30 cm X 30 cm white paper, and place it 10 cm away from the EVF lens

Adjusting method:

1) Set data: 01 to page: 0, address. 01.
2) Input the following data to page: D, address: 40 to 45.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	40	41	42	43	44	45
Data	00	00	00	00	00	00

3) Increase the data of page: D, address: 51, and turn on the backlight.
4) Decrease the data of page. D, address: 51 slowly, and turn off the backlight.
5) Press the PAUSE button of the adjusting remote commander.
6) Move the white paper away from the EVF lens and turn off the backlight. Then move it to the lens slowly, and check that the backlight lights up when the distance (AUTO ON distance) is the specified value.
7) Move the white paper near the EVF lens so that the backlight lights up and then move it away, and check that the backlight goes off when the distance (AUTO OFF distance) is the specified value.
8) Input the following data to page: D, address: 40 to 45.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	40	41	42	43	44	45
Data	3F	00	24	24	82	00

9) Set data: 00 to page: 0, address: 01

1-5. MONOCHROME ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS (1) (CCD-TRV62/TRV54E/TRV56E)

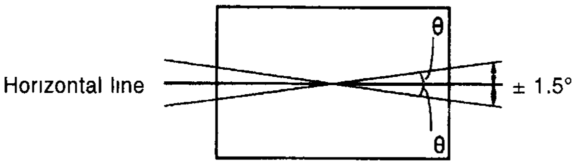
1-5-1. Horizontal Slant Check

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8NSE (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Specified Value	± 1.5°

Adjusting method:

1) Adjust RV904 (BRIGHT) so that the CRT can be seen easily and clearly
2) Check that the difference between the horizontal line and the tilt of the black mask satisfies the specified value.

Note : NTSC model : CCD-TRV62
PAL model : CCD-TRV54E/TRV56E



Specified value: The image should be within ± 1.5° of the horizontal line.

Fig. 5-1-16.

1-5-2. Centering Adjustment

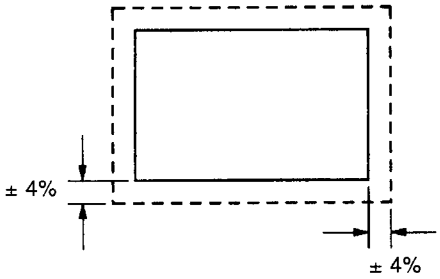
Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8NSE (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Specified Value	± 4%

Adjusting method:

1) Use the centering adjustment ring and adjust so that the left, right, top, and bottom sides of the display are uniform. (Refer to Fig 5-1-17)

Note 1: As the centering position changes due to earth magnetism, rotate it 360° in the horizontal direction, and adjust with the center section of the modifying position

Note 2 : NTSC model : CCD-TRV62
PAL model : CCD-TRV54E/TRV56E



Adjustment value . ± 4%

Fig. 5-1-18.

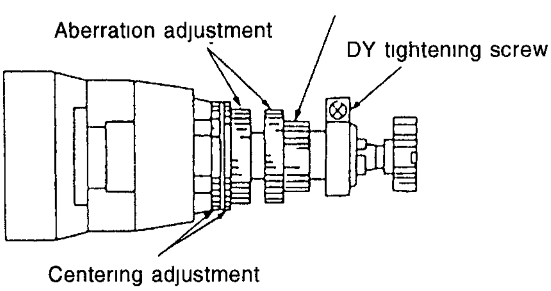


Fig. 5-1-17.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8NSE (NTSC)) (WR5-5CSP (PAL)) Monoscope section

1-5-3. Focus Adjustment

Adjusting method:

1) Adjust the focus ring to obtain the optimum focus (Refer to Fig 5-1-17.)

Note : NTSC model : CCD-TRV62
PAL model : CCD-TRV54E/TRV56E

1-5-4. Aberration Adjustment

Mode	VTR stop
Signal	Dot pattern
Specified Value	b_1_2•a_1 b_2_0.8•a_2

Adjusting method:

1) Adjust the aberration adjustment ring so that the tracing of the dot satisfies the specified value.
2) If the centering becomes displaced here, perform the centering adjustment from the beginning again

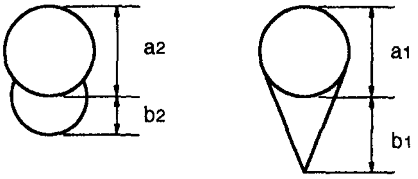


Fig. 5-1-19.

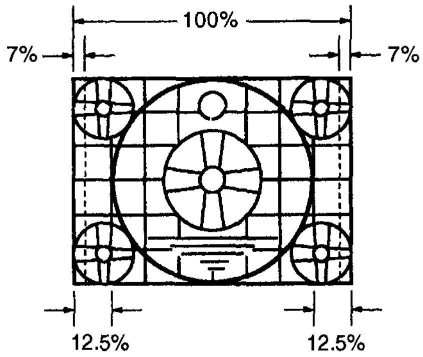
1-5-5. Horizontal Amplitude Adjustment (VF-99 board)

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8NSE (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Adjusting Element	C909 (SOL901)
Specified Value	14 ± 6%

Adjusting method:

1) Rotate RV903, and adjust the top and bottom sides of the monoscope image to the top and bottom edges of the display
2) Rotate RV904 so that the brightness is the normal level.
3) Solder or unsolder SOL901 pattern of the H size adjustment capacitor (C909) to "short" or "open", so that the horizontal direction over scan becomes 14 ± 6% (Left and right totals)

Note : NTSC model : CCD-TRV62
PAL model : CCD-TRV54E/TRV56E



SOL901	Size H
Open	Small
Short	Big

Fig. 5-1-20.

1-5-6. Vertical Amplitude Adjustment (VF-99 board)

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8NSE (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Adjusting Element	RV903
Specified Value	10 ± 3%

Adjusting method:

1) Adjust RV903 so that the vertical direction over scan becomes 10 ± 3% (Top and bottom totals).

Note : NTSC model : CCD-TRV62
PAL model : CCD-TRV54E/TRV56E

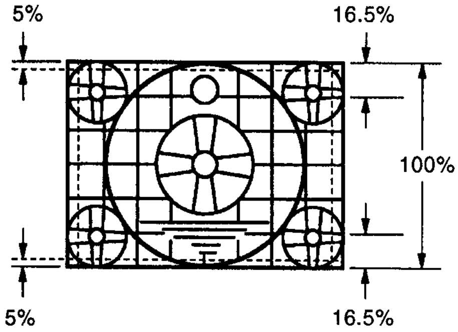


Fig. 5-1-21.

1-5-7. Brightness Adjustments (VF-99 board)

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8NSE (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Specified Value	RV904

Adjusting method:

1) Rotate RV904, and adjust so that the bright/dark sections of the gray scale are displayed correctly. (The bright section should be unsatisfactory till the cross hatch appears vague in the monoscope circle. The dark section should be unsatisfactory till the darkest section and the second darkest section of the gray scale cannot be differentiated.)

Note : NTSC model : CCD-TRV62
PAL model : CCD-TRV54E/TRV56E

1-5-8. Horizontal Amplitude, Vertical Amplitude, Focus Check

"1-5-5. Horizontal Amplitude Adjustment" and "1-5-6. Vertical Amplitude Adjustment" should both satisfy the specified values. If not, perform the adjustments from the beginning again. In this case, perform "1-5-7. Brightness, Contrast Adjustments" again

Moreover, check the focus, and if it found to be vague, perform "1-5-3. Focus Adjustment" and "1-5-4. Aberration Adjustment"

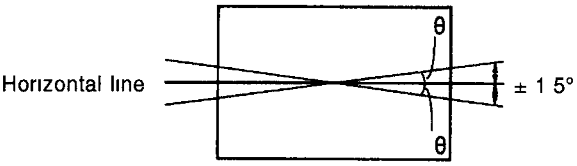
1-6. MONOCHROME ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS (2) (CCD-TRV64E)

1-6-1. Horizontal Slant Check

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8CSE) Monoscope section
Specified Value	± 1 5°

Adjusting method:

1) Adjust RV904 (BRIGHT) so that the CRT can be seen easily and clearly.
2) Check that the difference between the horizontal line and the tilt of the black mask satisfies the specified value.



Specified value: The image should be within ± 1.5° of the horizontal line

Fig. 5-1-22.

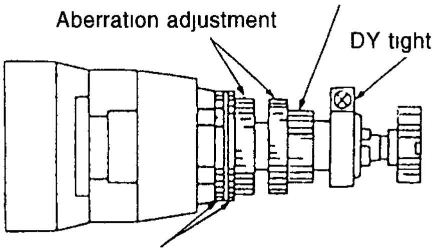


Fig. 5-1-23.

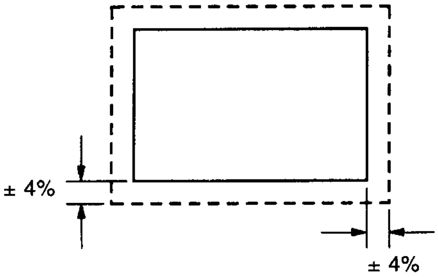
1-6-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8CSE) Monoscope section
Specified Value	± 4%

Adjusting method:

1) Use the centering adjustment ring and adjust so that the left, right, top, and bottom sides of the display are uniform. (Refer to Fig. 5-1-23.)

   Note: As the centering position changes due to earth magnetism, rotate it 360° in the horizontal direction, and adjust with the center section of the modifying position.



Adjustment value ± 4%

Fig. 5-1-24.

1-6-3. Focus Adjustment

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8CSE) Monoscope section

Adjusting method:

1) Adjust the focus ring to obtain the optimum focus. (Refer to Fig. 5-1-23.)

1-6-4. Aberration Adjustment

Mode	VTR stop
Signal	Dot pattern
Specified Value	$b_1 \leqq 2 \cdot a_1$ $b_2 \leqq 0.8 \cdot a_2$

Adjusting method:

1) Adjust the aberration adjustment ring so that the tracing of the dot satisfies the specified value
2) If the centering becomes displaced here, perform the centering adjustment from the beginning again.

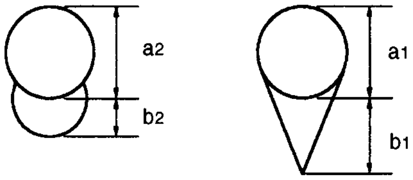


Fig. 5-1-25.

1-6-5. Vertical Amplitude Adjustment and Horizontal Amplitude Check (VF-102 board)

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8CSE) Monoscope section
Adjusting Element	RV905
Specified Value	Vertical: 10 ± 3% Horizontal: 7 ± 7%

Adjusting method:

1) Rotate RV905, and adjust the top and bottom sides of the monoscope image to the top and bottom edges of the display.
2) Rotate RV904 so that the brightness is the normal level.
3) Adjust RV905 so that the vertical over scan becames 10 ± 3% (Top and bottom totals).
4) Check that the horizontal over scan is 7 ± 7% (Left and right totals)

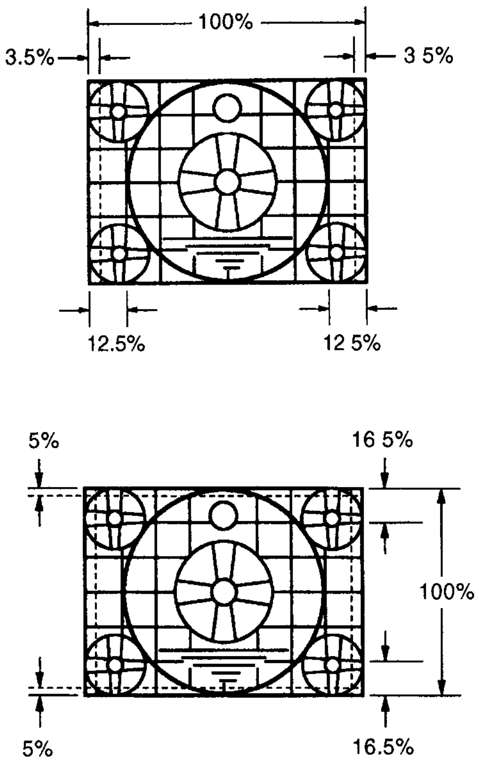


Fig. 5-1-26.

1-6-6. Brightness Adjustments (VF-102 board)

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8CSE) Monoscope section
Specified Value	RV904

Adjusting method:

1) Rotate RV904, and adjust so that the bright/dark sections of the gray scale are displayed correctly. (The bright section should be unsatisfactory till the cross hatch appears vague in the monoscope circle. The dark section should be unsatisfactory till the darkest section and the second darkest section of the gray scale cannot be differentiated.)

1-6-7. Horizontal Amplitude, Vertical Amplitude, Focus Check

"1-6-5 Vertical Amplitude Adjustment and Horizontal Amplitude Check" should both satisfy the specified values. If not, perform the adjustments from the beginning again. In this case, perform "1-6-6 Brightness, Contrast Adjustments" again Moreover, check the focus, and if it found to be vague, perform "1-6-3 Focus Adjustment" and "1-6-4 Aberration Adjustment"

1-7. LCD SYSTEM ADJUSTMENT (1)
(NTSC 4" LCD model: CCD-TRV82/TRV94)

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the brightness to the center using the LCD BRIGHT button.

[Adjusting connector]

Most of the measuring points for adjusting the LCD display are concentrated in the following connector

CN802 of the PD-78 board Connect the measuring instruments via the multi CPC jig (J-6082-311-A)

The following table shows the Pin No. and signal name of the connector.

CN802 of the PD-78 board

Pin No.	Signal name	Pin No.	Signal name
1	VB	2	7 5V
3	VG	4	COM-O
5	VR	6	N C.
7	SYNC	8	HSY
9	GND	10	GND

Table 5-1-11.

[Power Supply Voltage]

Adjust the power supply voltage so that the battery terminal voltage becomes 8 4 ± 0 1 Vdc .

[Video input signal for adjustment]

If stated as "10-step stair-step" in the signal column, input the 10-step stair-step signal in the video input terminal as the video input signal for the adjusting Check that the input signal level is 1.00 Vp-p before adjusting

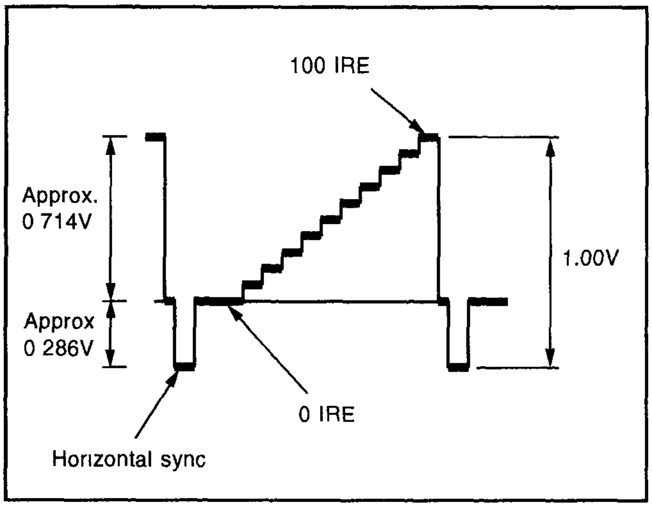


Fig. 5-1-27.

1. LCD Initial Data Input

Mode	VTR stop
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	3E, 3F, 52 to 63

Adjusting method:

1) Set data. 01 to page: 0, address. 01
2) Select page: D, and input the data in the following table
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data
3) Set data: 00 to page: 0, address: 01

Address	Data	Remarks
3E	04	Fixed value
3F	02	Fixed value
52	76	
53	6D	
54	5D	
55	65	
56	5B	
57	94	
58	7C	
59	41	
5A	67	
5B	40	
5C	80	Fixed value
5D	76	
5E	00	Fixed value
5F	80	Fixed value
60	00	Fixed value
61	00	Fixed value
62	A1	Fixed value
63	DA	Fixed value

Table 5-1-12.

2. VCO Adjustment (PD-78 board)

Set the VCO freerun frequency If deviated, the LCD screen will be blurred

Mode	VTR stop
Signal	No signal
Measurement point	Pin ⑧ of CN802 (HSY)
Measuring instrument	Frequency counter
Adjustment page	D
Adjustment address	58
Specified value	f = 15734 ± 30Hz

Note: Press the DISPLAY button and erase the screen indictors on the LCD screen

Adjusting method:

1) Set data: 01 to page: 0, address: 01
2) Set data: 37 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: D, address: 58, and set the HSY signal frequency (f) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01

3. D Range Adjustment (PD-78 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	10-step stair-step signal or color bar signal whose chroma and burst signals are turned off
Measurement point	Pin ③ of CN802 (VG) External trigger: Pin ④ of CN802 (COM-O)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	5A
Specified value	A = 3.62 ± 0.05V

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 5A, and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.

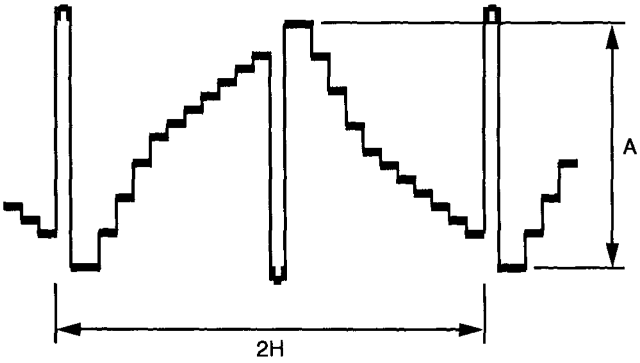


Fig. 5-1-28.

4. Bright Adjustment (PD-78 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	10-step stair-step
Measurement point	Pin ③ of CN802 (VG) External trigger: Pin ④ of CN802 (COM-O)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	52, 5D
Specified value	A = 0.47 ± 0.05V

Note: Perform "4. Bright Adjustment" and "5. Contrast Adjustment" alternately until each specified value is satisfied.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 52, and set the voltage (A) between the pedestal (0 IRE) and 10 IRE to the specified value.
   (The data of address: 52 should be "41" to "BF".)
3) Press the PAUSE button of the adjusting remote commander.
4) Set the same data as page: D, address: 52 to page: D, address: 5D, and press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 0, address: 01.
6) Check that the specified value of "Contrast Adjustment" is satisfied, if not, perform "Contrast Adjustment".

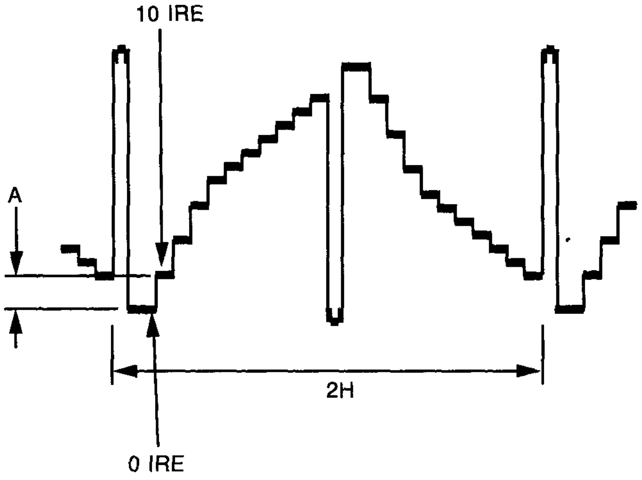


Fig. 5-1-29.

5. Contrast Adjustment (PD-78 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	10-step stair-step signal or color bar signal whose chroma and burst signals are turned off
Measurement point	Pin ③ of CN802 (VG) External trigger: Pin ④ of CN802 (COM-O)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	57
Specified value	A = 3.41 ± 0.07V

Note: Perform "4. Bright Adjustment" and "5. Contrast Adjustment" alternately until each specified value is satisfied.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 57, and set the voltage (A) between the pedestal (0 IRE) and 100 IRE (White(100%)) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.
5) Check that the specified value of "Bright Adjustment" is satisfied, if not, perform "Bright Adjustment".

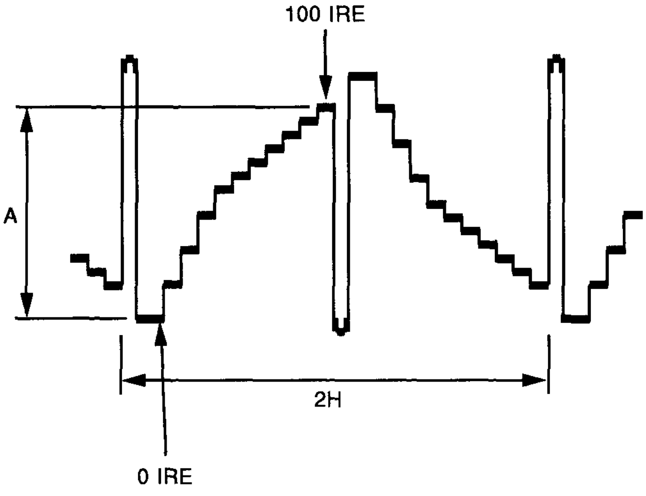


Fig. 5-1-30.

6. V-COM Level Adjustment (PD-78 board)

Set the common electrode drive signal level of LCD display to the specified value.

Mode	VTR stop
Signal	10-step stair-step signal or color bar signal whose chroma and burst signals are turned off
Measurement point	Pin ④ of CN802 (COM-O)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	5B
Specified value	A ≈ 6.60 ± 0.05V

Note: Perform "4. Bright Adjustment" and "5. Contrast Adjustment" before this adjustment.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 5B, and set the COM signal level (A) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.

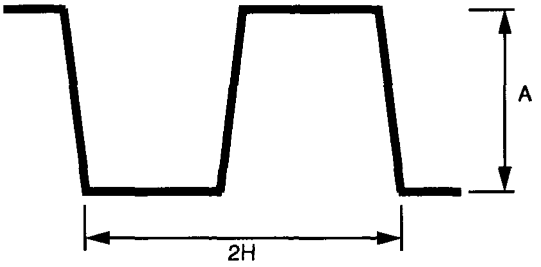


Fig. 5-1-31.

7. Color Adjustment (PD-78 board)

Set the color saturation to the standard value. If deviated, the color will be to dark or light.

Mode	VTR stop
Signal	Color bar
Measurement point	Pin ③ of CN802 (VG) External trigger: Pin ④ of CN802 (COM-O)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	53
Specified value	A = +0.13 ± 0.05V

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Add 10(Hexadecimal number) to the data of page: D, address: 57, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: D, address: 53, and set the green level (A) to white (75%) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Subtract 10(Hexadecimal number) from the data of page: D, address: 57, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

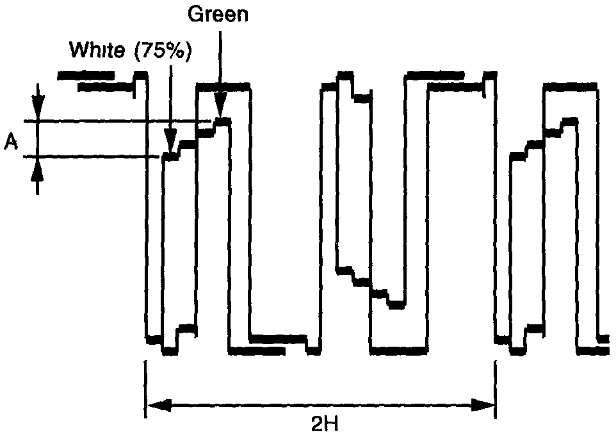


Fig. 5-1-32.

8. Hue Adjustment (PD-78 board)

Set the hue to the standard value. If deviated, the color will be to unnatural.

Mode	VTR stop
Signal	Color bar
Measurement point	Pin ③ of CN802 (VG) External trigger: Pin ④ of CN802 (COM-O)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	54
Specified value	A = +0.11 ± 0.05V

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Add 10(Hexadecimal number) to the data of page: D, address: 57, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: D, address: 54, and set the cyan level (A) to yellow to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Subtract 10 (Hexadecimal number) from the data of page: D, address: 57, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

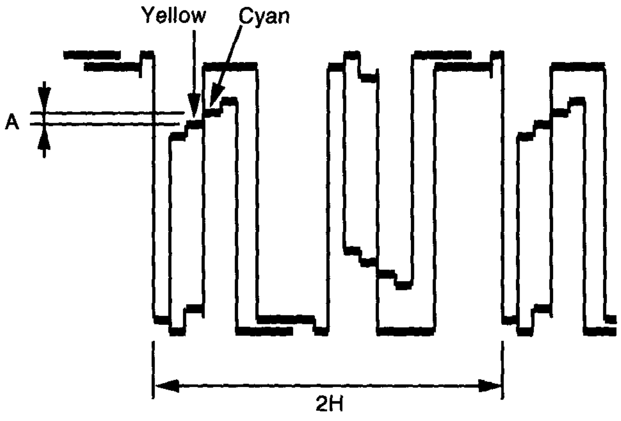


Fig. 5-1-33.

9. V-COM Adjustment (PD-78 board)

Set the DC bias of the common electrode drive signal of LCD display to the specified value.

If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	Playback pause
Signal	Alignment tape: LP mode operation check (WR-8NLE) Color bar portion
Measurement point	Check on LCD display
Measuring instrument	
Adjustment page	D
Adjustment address	59

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Playback the alignment tape and set to the playback pause mode.
3) Set the data of page: D, address: 59 to the initial value (41).
4) Change the data of page: D, address: 59. When the data is increased from the initial value, vertical lines with intervals of 3 dots between them will be seen. Take the data at this times as DA. When decreased from the initial value, the same vertical lines will be seen. Take the data at this times as DB.
5) Convert DA and DB to decimal numbers to obtain DA′ and DB′.
   (Refer to Table 5-1-5. "Hexadecimal-Decimal Conversion table".)
6) Calculate DC′ using the following equation (decimal calculation).
   $DC' = (DA' + DB') \div 2$
7) Convert DC′ to hexadecimal number to obtain DC .
8) Set data: DC to page: D, address: 59, and press the PAUSE button of the adjusting remote commander.
9) Set data: 00 to page: 0, address: 01.

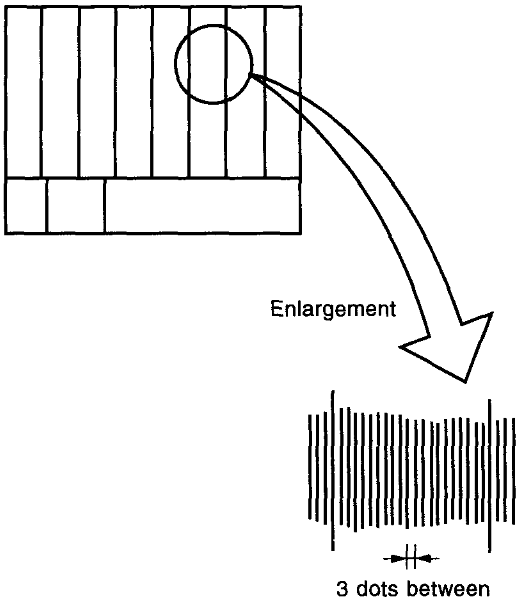


Fig. 5-1-34.

10. White Balance Adjustment (PD-78 board)

Correct the white balance.

If deviated, the LCD screen color cannot be reproduced.

Mode	VTR stop
Signal	10-step stair-step signal or color bar signal whose chroma and burst signals are turned off
Measurement point	Check on LCD screen
Measuring instrument	
Adjustment page	D
Adjustment address	55, 56
Specified value	The LCD screen should not be colored.

Note: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC805

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set the data of page: D, address: 55 and 56 to the initial value.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	55	56
Data	65	5B

3) Check that the LCD screen is not colored. If colored, change the data of page: D, address: 55 and 56 so that the LCD screen is not colored.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
4) Set data: 00 to page: 0, address: 01.

1-8. LCD SYSTEM ADJUSTMENT (2)
(NTSC 3.5" LCD model: CCD-TRV62/TRV72)
(PAL 4" LCD model: CCD-TRV56E/TRV94E)
(PAL 3.5" LCD model: CCD-TRV54E)
(PAL 2.5" LCD model: CCD-TRV64E)

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the brightness to the center using the LCD BRIGHT button

[Adjusting connector]

Most of the measuring points for adjusting the LCD display are concentrated in the following connector.
CN1802 of the PD-80 board (3.5"/4"LCD model) CN1904 of the PD-82 board (2.5"LCD model). Connect the measuring instruments via the multi CPC jig (J-6082-311-A).
The following table shows the Pin No. and signal name of the connector.

Pin No.	Signal name	Pin No.	Signal name
1	VB	2	N.C.
3	VG	4	N.C.
5	VR	6	SAT
7	SYNC	8	HDB
9	GND	10	GND

Table 5-1-13.

[Power Supply Voltage]

Adjust the power supply voltage so that the battery terminal voltage becomes 8.4 ± 0.1 Vdc .

[Video input signal for adjustment]

If stated as "10-step stair-step" in the signal column, input the 10-step stair-step signal in the video input terminal as the video input signal for the adjusting. Check that the input signal level is 1.00 Vp-p before adjusting.

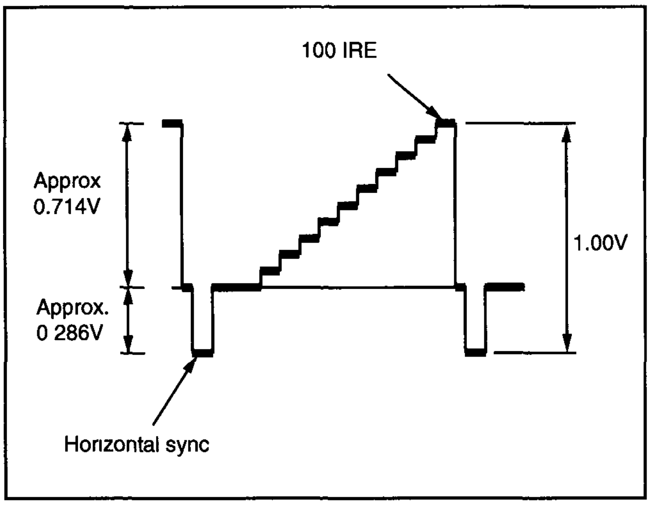


Fig. 5-1-35.

1. LCD Initial Data Input

Mode	VTR stop
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	3E, 3F, 52 to 63

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Select page: D, and input the data in the following table.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
3) Set data. 00 to page: 0, address: 01.

Address	Data				Remark
	NTSC 3.5" LCD	PAL 4" LCD	PAL 3.5" LCD	PAL 2.5" LCD	
3E	02	03	02	02	Fixed value
3F	02	02	02	02	Fixed value
52	9A	84	9A	7C	
53	6E	70	9A	70	
54	6E	67	6E	70	
55	79	7D	79	79	
56	71	76	71	71	
57	A7	9B	A7	77	
58	9E	80	97	C0	
59	83	90	83	83	
5A	7E	7C	7E	7E	Fixed value
5B	7C	7C	7C	7C	Fixed value
5C	69	80	88	88	Fixed value
5D	9A	84	9A	7C	
5E	00	67	72	72	(Fixed value)
5F	69	80	88	88	Fixed value
60	00	D9	F0	F0	Fixed value
61	00	59	60	60	Fixed value
62	8B	A1	8B	9D	Fixed value
63	C0	DA	C0	E3	Fixed value

( ): NTSC model only (CCD-TRV62/TRV72)

Table 5-1-14.

2. VCO Adjustment
(PD-80 board (3.5"/4"LCD model))
(PD-82 board (2.5"LCD model))

Set the VCO freerun frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement point	3.5"/4"LCD model: Pin ⑧ of CN1802 (HDB) of PD-80 board 2.5" LCD model: Pin ⑧ of CN1904 (HDB) of PD-82 board
Measuring instrument	Frequency counter
Adjustment page	D
Adjustment address	58
Specified value	f = 15734 ± 30Hz (NTSC) f = 15625 ± 30Hz (PAL)

Note 1: Press the DISPLAY button and erase the screen indictors on the LCD screen.

Note 2: NTSC model : CCD-TRV62/TRV72
PAL model : CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 37 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: D, address: 58, and set the HDB signal frequency (f) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

3. Bright Adjustment
(PD-80 board (3.5"/4"LCD model))
(PC-65 board (2.5"LCD model))

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	10-step stair-step signal or color bar signal whose chroma and burst signals are turned off
Measurement point	3.5"/4"LCD model: Pin ③ of CN1802 (VG) of PD-80 board 2.5" LCD model: Pin ③ of CN1904 (VG) of PD-82 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	52, 5D
Specified value	A = 2.45 ± 0.05V

Note: Perform "3. Bright Adjustment" and "4. Contrast Adjustment" alternately until each specified value is satisfied.

Adjusting method:
1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 52, and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set the same data as page: D, address: 52 to page: D, address: 5D, and press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 0, address: 01.
6) Check that the specified value of "Contrast Adjustment" is satisfied, if not, perform "Contrast Adjustment".

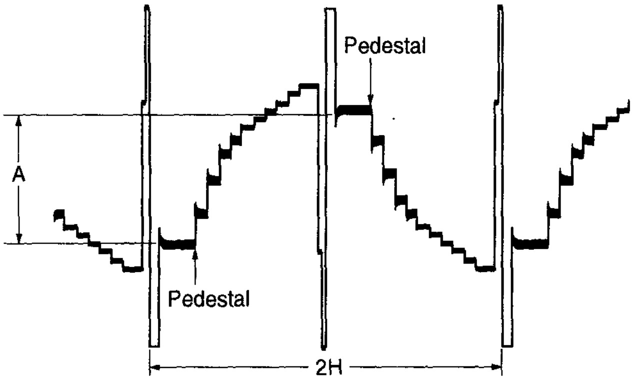


Fig. 5-1-36.

4. Contrast Adjustment
(PD-80 board (3.5"/4"LCD model))
(PC-65 board (2.5"LCD model))

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	10-step stair-step signal
Measurement point	3.5"/4"LCD model: Pin ③ of CN1802 (VG) of PD-80 board 2.5" LCD model: Pin ③ of CN1904 (VG) of PD-82 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	57
Specified value	A = 2.60 ± 0.05V

Note: Perform "3. Bright Adjustment" and "4. Contrast Adjustment" alternately until each specified value is satisfied.

Adjusting method:
1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 57, and set the voltage (A) between the pedestal (0 IRE) and 80 IRE to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.
5) Check that the specified value of "Bright Adjustment" is satisfied, if not, perform "Bright Adjustment".

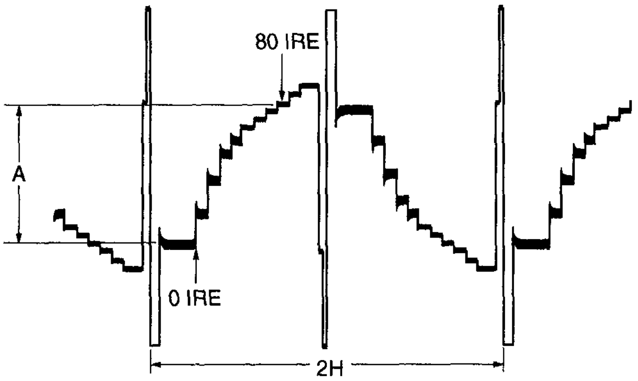


Fig. 5-1-37.

5. Color Adjustment for NTSC model (PD-80 board)

Set the color saturation to the standard value. If deviated, the color will be to dark or light.

Mode	VTR stop
Signal	Color bar
Measurement point	Pin ③ of CN1802 (VG)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	53
Specified value	A = +0.32 ± 0.05V

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 53, and set the green level (A) to White (75%) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.

Note : NTSC model : CCD-TRV62/TRV72

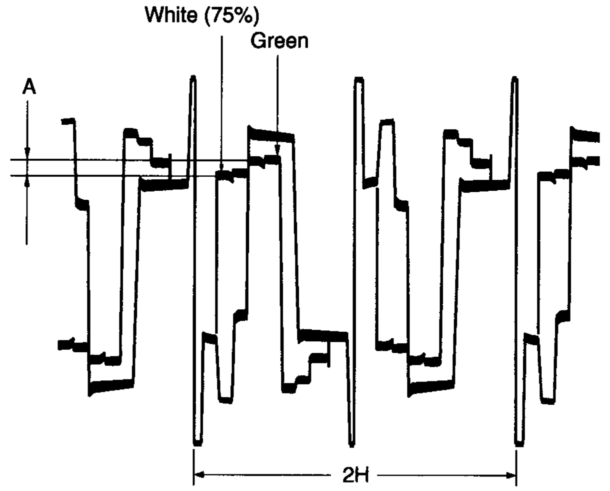


Fig. 5-1-38.

6. Hue Adjustment for NTSC model (PD-80 board)

Set the hue to the standard value. If deviated, the color will be to unnatural.

Mode	VTR stop
Signal	Color bar
Measurement point	Pin ③ of CN1802 (VG)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	54
Specified value	A = +0.07 ± 0.05V

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 54, and set the cyan level (A) to yellow to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.

Note : NTSC model : CCD-TRV62/TRV72

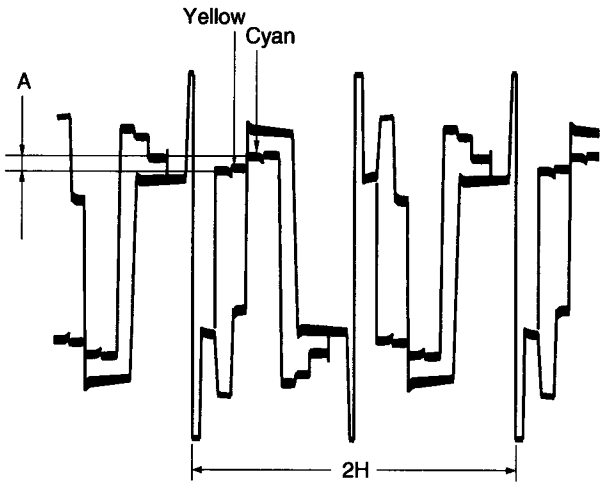


Fig. 5-1-39.

7. Burst Cleaning Adjustment for PAL model (PD-80 board (3.5"/4"LCD model)) (PC-65 board (2.5"LCD model))

Adjust to the optimum PAL chroma signal demodulation phase. If the phase is not correct, moire distortion noises will stand out.

Mode	VTR stop
Signal	Color bar
Measurement point	3.5"/4"LCD model: Pin ③ of CN1802 (VG) of PD-80 board 2.5" LCD model: Pin ③ of CN1904 (VG) of PD-82 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	54, 5E
Specified value	A = 0 ± 50 mV

Note 1: Perform "7. Burst Cleaning Adjustment for PAL model" and "8. Color Adjustment for PAL model" alternately until each specified value is satisfied.

Note 2 : PAL model : CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 54, and adjust so that the flicker amplitude(A) of the cyan section becomes minimum.
3) Press the PAUSE button of the adjusting remote commander.
4) Set the same data as page: D, address: 54 to page: D, address: 5E, and press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 0, address: 01.
6) Check that the specified value of "Color Adjustment for PAL model" is satisfied, if not, perform "Color Adjustment for PAL model".

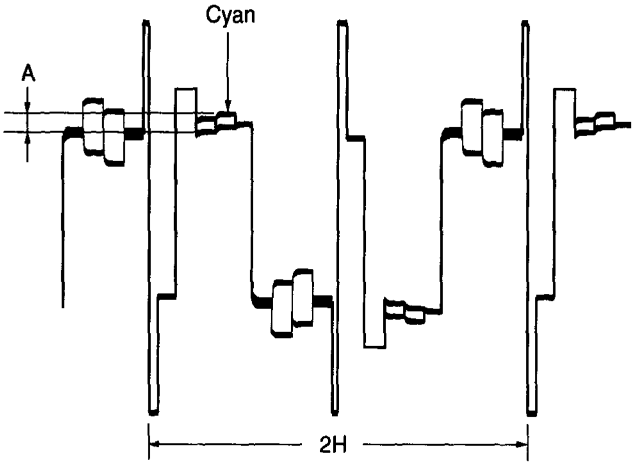


Fig. 5-1-40.

8. Color Adjustment for PAL model (PD-80 board (3.5"/4"LCD model)) (PC-65 board (2.5"LCD model))

Set the color saturation to the standard value. If deviated, the color will be to dark or light.

Mode	VTR stop
Signal	Color bar
Measurement point	3.5"/4"LCD model: Pin ③ of CN1802 (VG) of PD-80 board 2.5" LCD model: Pin ③ of CN1904 (VG) of PD-82 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	53
Specified value	A = +0.16 ± 0.05V

Note 1: Perform "7. Burst Cleaning Adjustment for PAL model" and "8. Color Adjustment for PAL model" alternately until each specified value is satisfied.

Note 2 : PAL model : CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: D, address: 53, and set the green level (A) to yellow to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.
5) Check that the specified value of "Burst Cleaning Adjustment for PAL model" is satisfied, if not, perform "Burst Cleaning Adjustment for PAL model".

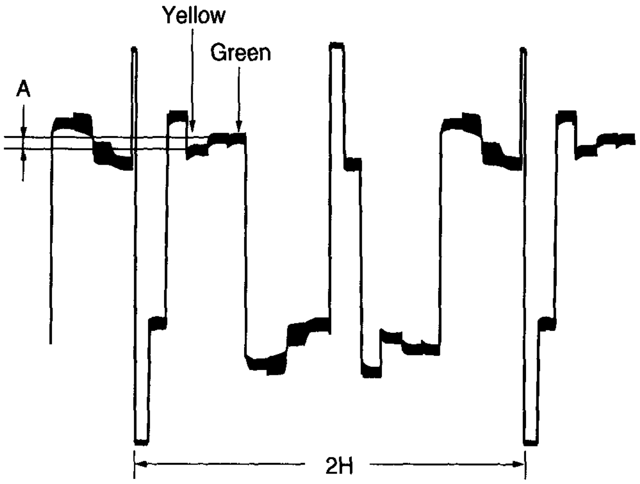


Fig. 5-1-41.

9. V-COM Adjustment
(PD-80 board (3.5"/4"LCD model))
(PD-82 board (2.5"LCD model))

Set the DC bias of the common electrode drive signal of LCD display to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	Playback pause
Signal	Alignment tape: LP mode operation check (WR-8NLE (NTSC)) (WR-8CLE or WR5-4CL (PAL)) Color bar portion
Measurement point	Check on LCD display
Measuring instrument	
Adjustment page	D
Adjustment address	59

Note :NTSC model : CCD-TRV62/TRV72
PAL model : CCD-TRV54E/TRV56E/TRV64E/TRV94E

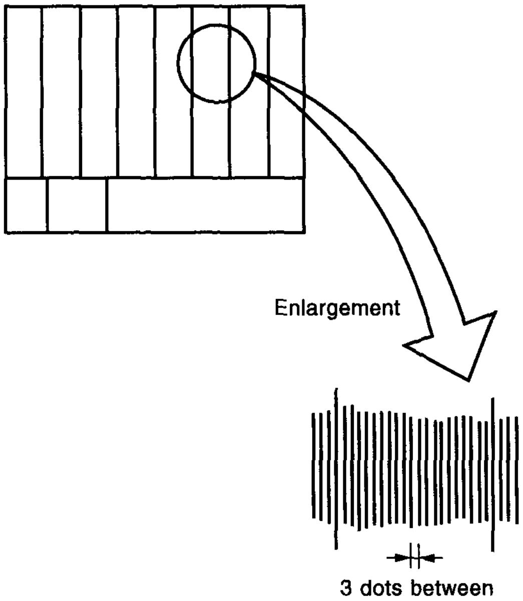


Fig. 5-1-42.

Adjusting method:

1) Set data: 01 to page: 0, address. 01.
2) Playback the alignment tape and set to the playback pause mode.
3) Set the data of page: D, address: 59 to the initial value.

Model	**NTSC 3.5"LCD**	**PAL 4"LCD**	**PAL 3.5"LCD**	**PAL 2.5"LCD**
Initial value	83	90	83	83

4) Change the data of page: D, address: 59. When the data is increased from the initial value, vertical lines with intervals of 3 dots between them will be seen. Take the data at this times as DA. When decreased from the initial value, the same vertical lines will be seen. Take the data at this times as DB.
5) Convert DA and DB to decimal numbers to obtain DA′ and DB′.
   (Refer to Table 5-1-5. "Hexadecimal-Decimal Conversion table".)
6) Calculate DC′ using the following equation (decimal calculation).
   $DC' = (DA' + DB') \div 2$
7) Convert DC′ to hexadecimal number to obtain DC .
8) Set data: DC to page: D, address: 59, and press the PAUSE button of the adjusting remote commander.
9) Set data: 00 to page. 0, address: 01.

10. White Balance Adjustment (PD-80 board (3.5"/4"LCD model)) (PC-65 board (2.5"LCD model))

Correct the white balance.

If deviated, the LCD screen color cannot be reproduced.

Mode	VTR stop
Signal	10-step stair-step signal or color bar signal whose chroma and burst signals are turned off
Measurement point	Check on LCD screen
Measuring instrument	
Adjustment page	D
Adjustment address	55, 56
Specified value	The LCD screen should not be colored.

Note: Check the white balance only when replacing the following parts. If necessary, adjust them.

1. LCD panel
2. Light induction plate
3. IC1801

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set the data of page: D, address: 55 and 56 to the initial value.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

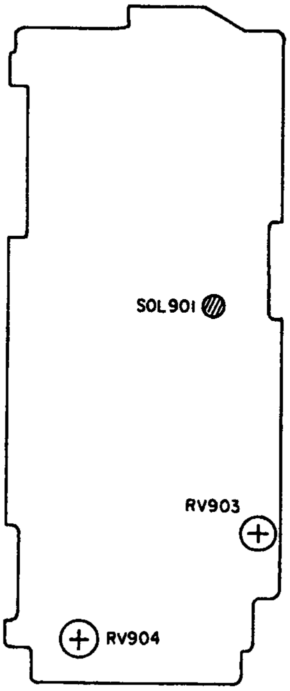
Address	**Data**			
	NTSC 3.5"LCD	**PAL 4"LCD**	**PAL 3.5"LCD**	**PAL 2.5"LCD**
55	79	7D	79	79
56	71	76	71	71

3) Check that the LCD screen is not colored. If colored, change the data of page: D, address: 55 and 56 so that the LCD screen is not colored.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
4) Set data: 00 to page: 0, address: 01.

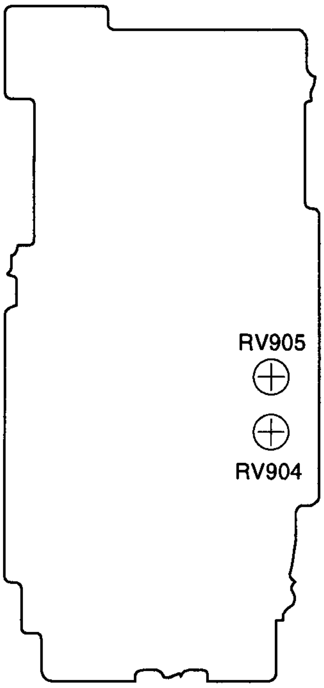
1-9. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

VF-99 BOARD (SIDE A) (B/W EVF MODEL 1)


SOL901
RV903
RV904

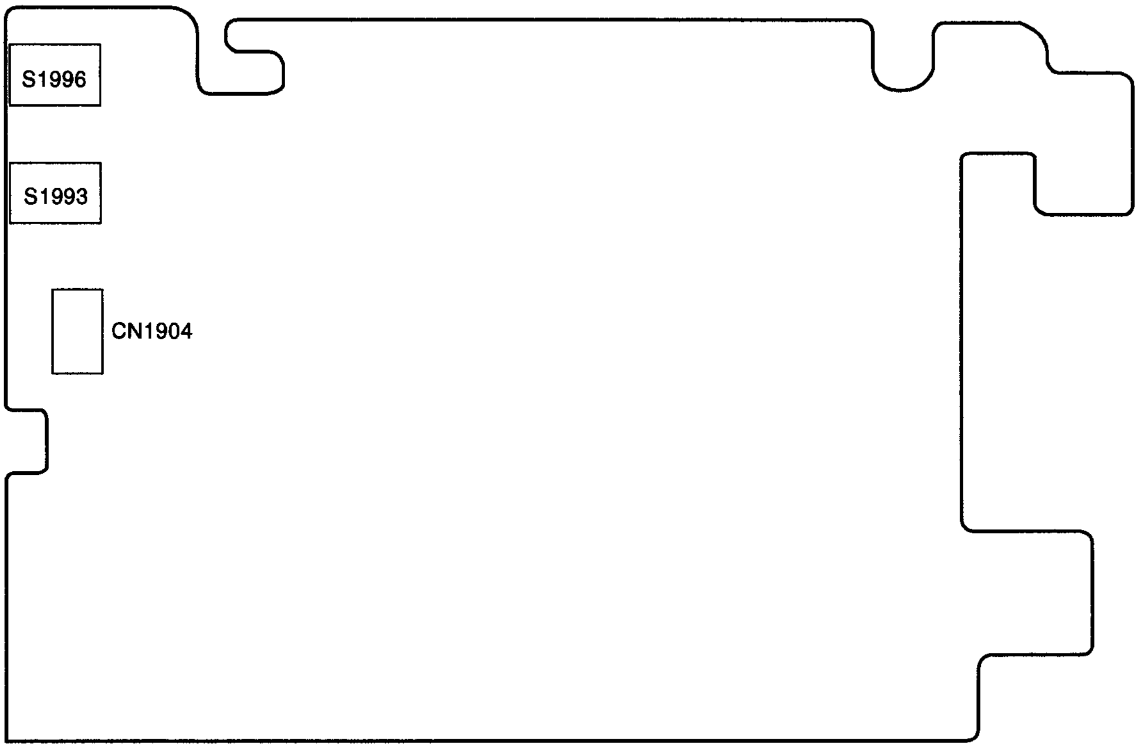
B/W EVF MODEL 1: CCD-TRV62/TRV54E/TRV56E

VF-102 BOARD (SIDE A) (B/W EVF MODEL 2)


RV905
RV904

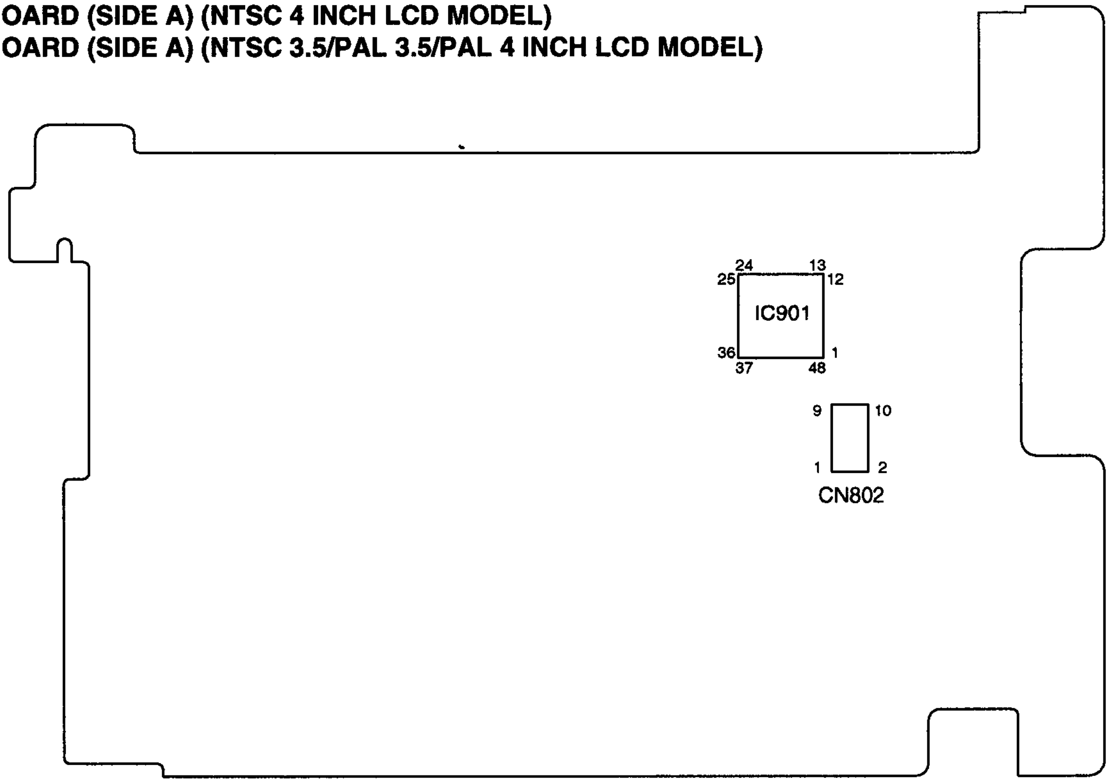
B/W EVF MODEL 2: CCD-TRV64E

PD-82 BOARD (SIDE B) (2.5 INCH LCD MODEL)

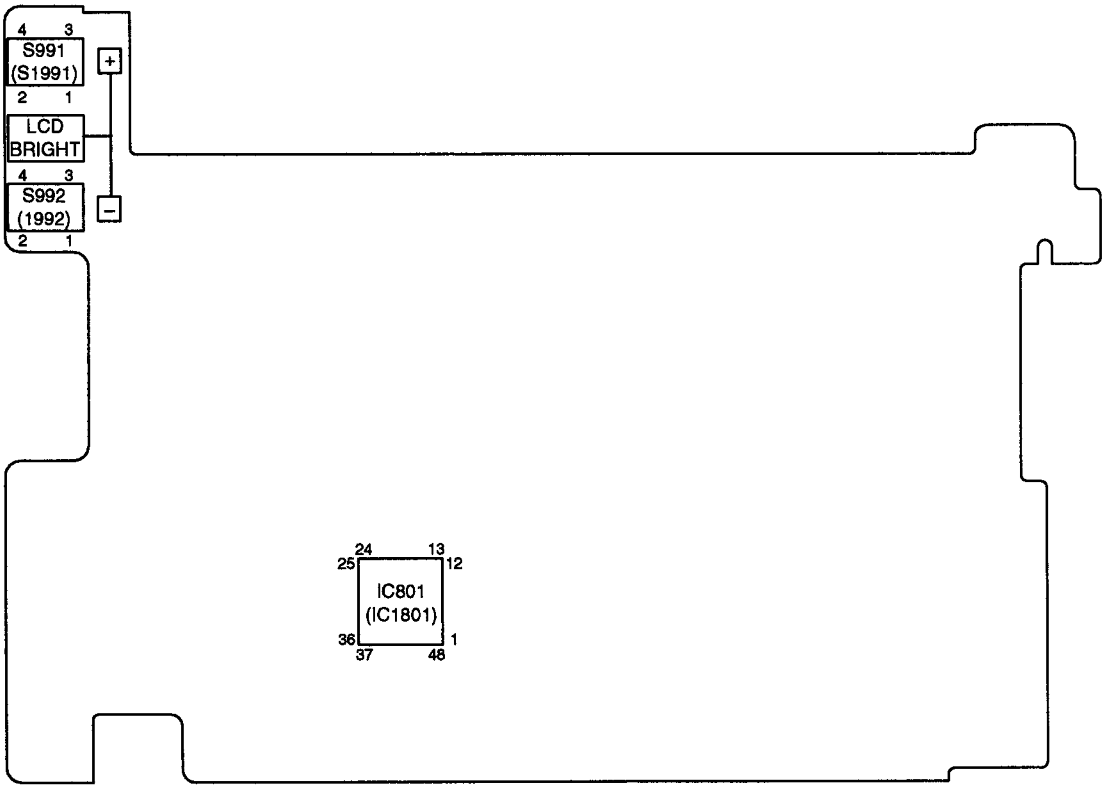

S1996
S1993
CN1904

2.5 INCH LCD MODEL: CCD-TRV64E

PD-78 BOARD (SIDE A) (NTSC 4 INCH LCD MODEL)
PD-80 BOARD (SIDE A) (NTSC 3.5/PAL 3.5/PAL 4 INCH LCD MODEL)


24
13
25
12
IC901
36
1
37
48
9
10
1
2
CN802

PD-78 BOARD (SIDE B) (NTSC 4 INCH LCD MODEL)
PD-80 BOARD (SIDE B) (NTSC 3.5/PAL 3.5/PAL 4 INCH LCD MODEL)


4
3
S991
(S1991)
2
1
LCD
BRIGHT
4
3
S992
(1992)
2
1
+
−
24
13
25
12
IC801
(IC1801)
36
1
37
48

(   ): NTSC 3.5/PAL 3.5/PAL 4 INCH LCD MODEL
NTSC 4 INCH LCD MODEL: CCD-TRV82/TRV94
NTSC 3.5 INCH LCD MODEL: CCD-TRV62/TRV72
PAL 4 INCH LCD MODEL: CCD-TRV56E/TRV94E
PAL 3.5 INCH LCD MODEL: CCD-TRV54E
NO MARK: NTSC 4 INCH LCD MODEL: CCD-TRV54E

5-2. MECHANICAL SECTION ADJUSTMENT

Mechanism Parts Adjustments

For details on the adjustments and checks of mechanical section and replacements of mechanism parts, refer to the separate volume- "8 mm Video Mechanism Adjustment Manual VII B Mechanism"

2-1. OPERATING WITHOUT A CASSETTE

1) Refer to "Section 2 DISASSEMBLY" and supply the power with the cabinet removed. (So that the mechanical deck can be operated.)
2) Connect the adjusting remote commander to the LANC terminal.
3) Turn on the HOLD switch of the adjusting remote commander.
4) Close the cassette compartment without loading a cassette and complete loading.
5) Set data: 01 to page: 0, address: 01.
6) Set data: 01 to page: F, address: 29, and press the PAUSE button of the adjusting remote commander.
7) Set data: 04 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
8) Disconnect the power supply of the unit.

By carrying out the above procedure, the unit can be operated without loading a cassette.
Be sure to carry out "Processing after Operations" after checking the operations.
Set the data of page: D, address: 10 to the following if the sensor ineffective mode, forced PLAYER (VTR) power supply ON mode or forced camera power supply ON mode are to be used together.

Forced VTR power supply ON mode..........06
Forced camera power supply ON mode......05

[Processing after Operations]

1) Set data: 01 to page: 0, address: 01.
2) Set data: 00 to page: F, address: 29, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.
5) Disconnect the power supply of the unit.

2-2. TAPE PATH ADJUSTMENT

1. Preparations for adjustments

1) Clean the tape path face (tape guide, drum, capstan shaft, pinch roller).
2) Connect the adjusting remote commander to the LANC terminal.
3) Turn on the HOLD switch of the adjusting remote commander.
4) Select page: 0, address: 01, and set data: 01.
5) Select page: F, address: 29, and set data: 04 and press the PAUSE button of the adjusting remote commander.
   (Be sure to perform "Processing after operations" after completing adjustments.)
6) Connect the oscilloscope.
   Channel 1: Pin ⑥ of CN207 of VC-190 board
   External trigger: Pin ③ of CN207 of VC-190 board
   (Connect the oscilloscope via the CPC-7 jig (J-6082-382-A).)
7) Playback the alignment tape for tracking.
   WR5-1NP: For NTSC model
   (CCD-TRV62/TRV72/TRV82/TRV92)
   WR5-1CP: For PAL model
   (CCD-TRV54E/TRV56E/TRV64E/TRV94E)
8) Check that the RF waveform of the oscilloscope is flat at both the entrance and the exit.
   If not flat, perform necessary adjustment according to the separate "8 mm Video Mechanical Adjustment Manual VII (B Mechanism)".
9) Perform "Processing after operations", after completing adjustments.

CN207 of VC-190 board

Pin No.	Signal Name	Pin No.	Signal Name
1	PB PCM RF	9	EZ I/O
2	REC RF	10	EVF UNREG (–)
3	RF SWP	11	EVF UNREG
4	CAP FG	12	EVF VG
5	REG GND	13	VCO
6	PB RF	14	BPF MON
7	RF AGC IN	15	RF AGC OUT
8	REC AFM	16	AFC FO

[Processing after operations]

1) Connect the adjusting remote commander, and turn on the HOLD switch.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: F, address: 29, and set data: 00.
4) Press the PAUSE button of the adjusting remote commander.
5) Select page: 0, address: 01, and set data: 00.
6) Remove the power supply from the unit.

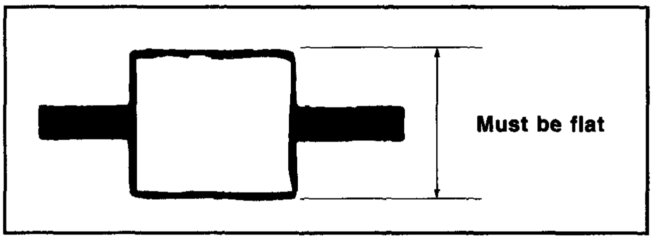


Fig. 5-2-1.

5-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 5-92.

3-1. PREPARATIONS BEFORE ADJUSTMENT

The following adjusting instruments are used for adjusting the video section.

3-1-1. Equipments to be Used

1) TV monitor
2) Oscilloscope: 2 phenomena, band 30 MHz or wider, with delay mode. (Use a 10:1 probe unless specified otherwise.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuater
10) Regulated power supply
11) Alignment tape

    [For NTSC model)
    - For tracking adjustment (WR5-1NP)
      Part Code: 8-967-995-02
    - For video frequency characteristics adjustment (WR5-7NE) Part Code: 8-967-995-13
    - For checking Standard 8 mode operations
      For LP (WR5-4NL)
      Part Code: 8-967-995-51
      For SP (WR5-5NSP)
      Part Code: 8-967-995-42

      Note: The following alignment tapes can also be used.
      1) WR5-4NSP (8-967-995-41)
    - For checking Hi8 mode operations
      For SP (WR5-8NSE)
      Part Code: 8-967-995-43
      For LP (WR5-8NLE)
      Part Code: 8-967-995-52
    - For checking AFM stereo operations (WR5-9NS)
      Part Code: 8-967-995-23
      For checking BPF adjustment (WR5-11NS)
      Part Code: 8-967-995-71

    [For PAL model]
    - For tracking adjustment (WR5-1CP)
      Part Code: 8-967-995-07
    - For video frequency characteristics adjustment (WR5-7NE) Part Code: 8-967-995-18
    - For checking Standard 8 mode operations
      For LP (WR5-4CL)
      Part Code: 8-967-995-56
      For SP (WR5-5CSP)
      Part Code: 8-967-995-47

      Note: The following alignment tapes can also be used.
      1) WR5-3CL (8-967-995-36)
      2) WR5-4CSP (8-967-995-46)
    - For checking Hi8 mode operations
      For SP (WR5-8CSE)
      Part Code: 8-967-995-48
      For LP (WR5-8CLE)
      Part Code: 8-967-995-57
    - For checking AFM stereo operations (WR5-9CS)
      Part Code: 8-967-995-28
      For checking BPF adjustment (WR5-11CS)
      Part Code: 8-967-995-76
12) Remote commander for adjustment (J-6082-053-B)
13) CPC-7 jig Part Code: J-6082-382-A
14) Power code Part Code: J-6082-223-A
15) AFM DEV jig (J-6082-312-A)
16) IR Receiving jig (J-6082-383-A)

3-1-2. Precautions in Adjustment

1) The adjustments of this unit are performed in the VTR mode (S VIDEO terminal input or VIDEO terminal input mode) or in the camera mode.
   To set to the VTR mode, set the power switch to "VTR or PLAYER" or set to the "forced VTR power supply ON mode" (Note 1) using the adjusting remote commander.
   To set to the camera mode, set the power switch to "CAMERA" or set to the "forced camera+VTR power supply ON mode" (Note 2) using the adjusting remote commander.
   After completing adjustments, be sure to exit the "forced VTR power supply ON mode" or "forced camera+VTR power supply ON mode". (Note 3)
2) The front panel block (MI-27/MI-28/MA-298 boards) need not be connected except in "IR Transmitter Adjustments" and "Battery End Adjustments". To remove, disconnect the following connectors.
   1. CN303 (26P 0.5 mm) of MI-27/28 board (3.5" LCD/4" LCD model)
   2. CN303 (14P. 0.5 mm) of MA-298 board (2.5" LCD model)
3) The viewfinders (VF-111, 112 boards (COLOR EVF model), VF-99/102 board (B/W EVF model)) need not be connected except in "Battery End Adjustments". To remove, disconnect the following connector.
   1. CN111 (20P. 0.5 mm) of VC-190 board
4) By setting the "forced power supply ON mode", the video section can be operated even if the cabinet (R) (power switch, speaker, SD-27/28 board) has been removed. When removing the cabinet (R), disconnect the following two connectors. However, as removing CN1953 means removing the lithium 3V power supply, data such as date, time, user-set menus will be lost. After adjustments, reset these data. If CN1953 has been removed, the self-diagnosis data, data on history of use (total drum rotation time, date of when the user first turned the power ON, and the date of when condensation occurred the last time) will be lost. Before removing, note down the self-diagnosis data and data of page: 3, address: E0 to E9. (Refer to the "Service Mode" for the data on the history of use.)
   1. CN1950 of VC-190 board (28P, 0.5 mm)
   2. CN1953 of VC-190 board (28P, 0.5 mm)

   After completing the adjustment, be sure to exit the "forced power supply ON mode".
5) The lens block (CD-166 board) and accessory shoe are not required for the adjustments of the video section (except in "Battery End Adjustment"). To remove, disconnect the following three connectors.
   1. CN112 of VC-190 board (16p, 0.5 mm)
   2. CN113 of VC-190 board (23P, 0.5 mm)
   3. CN205 of VC-190 board (10P, 0.5 mm)

Note 1: Setting the "forced VTR power supply ON mode"
1) Set data: 01 to page: 0, address: 01.
2) Set data: 02 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
   Hereafter, VTR operations can be performed even if the cabinet (R) has been removed.
   After completing adjustments, be sure to exit the "forced VTR power supply ON mode".

Note 2: Setting the "forced camera+VTR power supply ON mode" (camera mode)
1) Set data: 01 to page: 0, address: 01.
2) Set data: 03 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
   Hereafter, VTR operations can be performed even if the cabinet (R) has been removed.
   After completing adjustments, be sure to exit the "forced power supply ON mode".

Note 3: Exiting the "forced power supply ON mode"
1) Set data: 01 to page: 0, address: 01.
2) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 0, address: 01.

3-1-3. Connector for Adjustments

Some video section adjustment points are concentrated on the VC-190 board CN207. Connect the measuring instruments via a CPC-7 jig (J-6082-382-A).

Pin No.	Signal Name	Pin No.	Signal Name
1	PB PCM RF	9	EZ I/O
2	REC RF	10	EVF UNREG (–)
3	RF SWP	11	EVF UNREG
4	CAP FG	12	EVF VG
5	REG GND	13	VCO
6	PB RF	14	BPF MON
7	RF AGC IN	15	RF AGC OUT
8	REC AFM	16	AFC FO

Table 5-3-1.

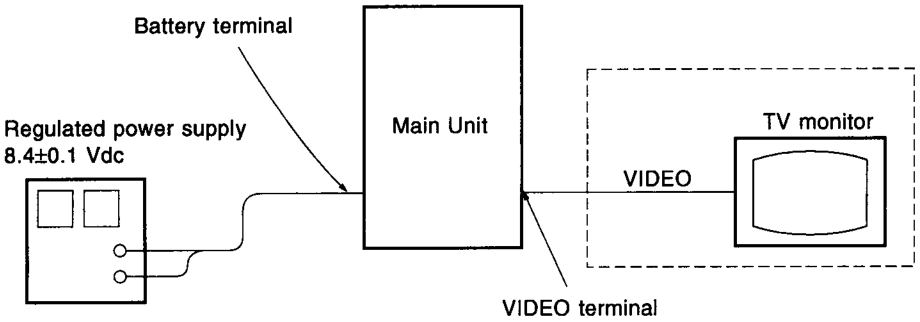
3-1-4. Connecting the Equipments

Connect the measuring instruments as shown in Fig. 5-3-1 according to the input terminal specifications (VIDEO input or S VIDEO input), and perform the adjustments.
The input terminal is specified in the ( ) in the signal column. Either input terminal can be used when there are no specifications.

Note 1: If the VIDEO input is used for adjustments which specify for the S VIDEO input to be used, the product specifications of the unit may not be satisfied in some cases. Be sure to perform according to the specifications.

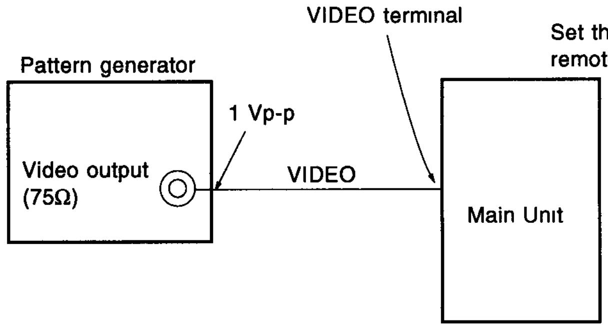
Note 2: When adjustments are performed with the S video output terminal VTR as the signal source, the efficiencies of the unit may be affected by the VTR. It is recommended that a pattern generator with a Y/C separation output terminal be used as much as possible.

Connecting the TV Monitor and Regulated Power Supply


Battery terminal
Regulated power supply
8.4±0.1 Vdc
Main Unit
TV monitor
VIDEO
VIDEO terminal

Connect when using the camera input or playing back

Connecting the Pattern Generator
[VIDEO Input]

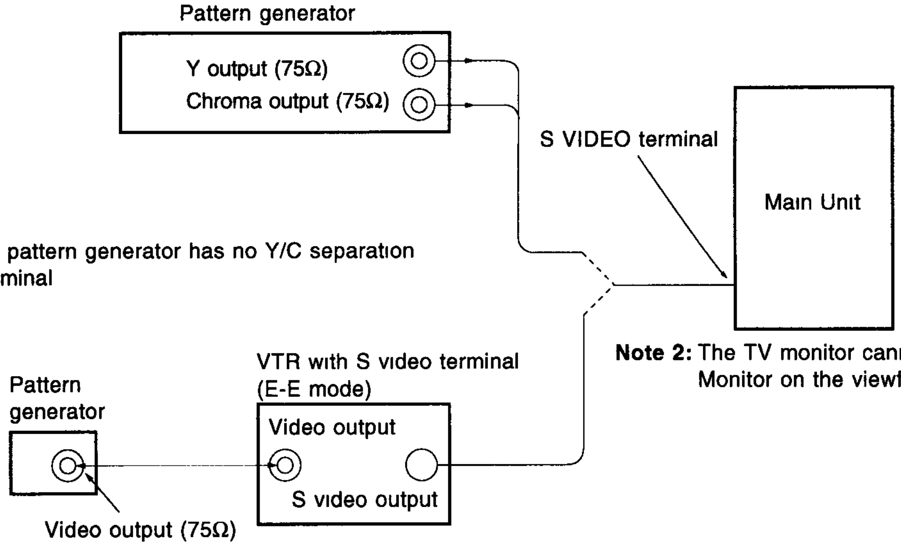

VIDEO terminal
Pattern generator
1 Vp-p
Video output
(75Ω)
VIDEO
Main Unit

Set the power supply switch to “VTR” (or “PLAYER”) or the adjusting remote commander to “Forcible VTR power ON mode”.

Note 1: The TV monitor cannot be connected Monitor on the viewfinder screen.

[S VIDEO Input] (Hi8 model)

- When the pattern generator has a Y/C separation output terminal
- When the pattern generator has no Y/C separation output terminal


Pattern generator
Y output (75Ω)
Chroma output (75Ω)
S VIDEO terminal
Main Unit
VTR with S video terminal
(E-E mode)
Pattern
generator
Video output
S video output
Video output (75Ω)

Note 2: The TV monitor cannot be connected Monitor on the viewfinder screen

Fig. 5-3-1.

3-1-5. Checking the Input Signals

Because the video signal obtained from the pattern generator is used as the adjustment signal for adjusting the VTR section, the video output signal must satisfy the given specifications

1. S VIDEO input

Connect the oscilloscope to the Y signal terminal of the S VIDEO terminal, and check that the sync signal of the Y signal is approximately <0.286> [0.30]V and that the amplitude of the video section is approximately <0.714> [0.70]V. (When a VTR with the S VIDEO output terminal is used, also check that the chroma signal and burst signal have not remained.) Connect the oscilloscope to the chroma signal terminal of the S VIDEO terminal, and check that the burst signal amplitude of the chroma signal is approximately <0.286>[0.30]V and flat, and that the amplitude ratio of the burst signal to the chroma signal is 0.30:0.66 The Y and chroma signals used in the adjustment are shown in Fig 5-3-2.

< >: NTSC model (CCD-TRV62/TRV72/TRV82/TRV94)

[ ]: PAL model (CCD-TRV54E/TRV56E/TRV64E/TRV94E)

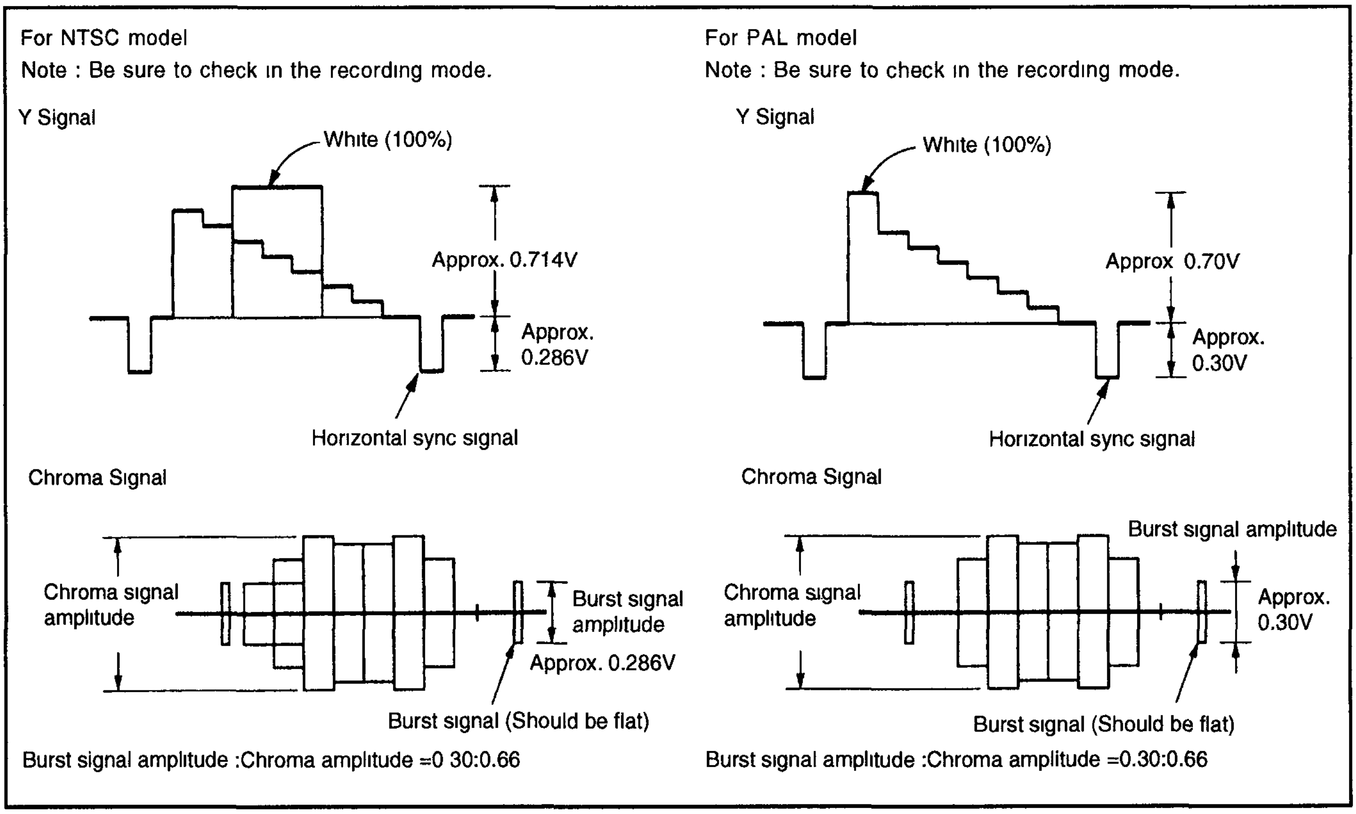

For NTSC model
Note : Be sure to check in the recording mode.
Y Signal
White (100%)
Approx. 0.714V
Approx. 0.286V
Horizontal sync signal
Chroma Signal
Chroma signal amplitude
Burst signal amplitude
Approx. 0.286V
Burst signal (Should be flat)
Burst signal amplitude :Chroma amplitude =0.30:0.66
For PAL model
Note : Be sure to check in the recording mode.
Y Signal
White (100%)
Approx 0.70V
Approx. 0.30V
Horizontal sync signal
Chroma Signal
Burst signal amplitude
Chroma signal amplitude
Approx. 0.30V
Burst signal (Should be flat)
Burst signal amplitude :Chroma amplitude =0.30:0.66

Fig. 5-3-2. Color bar signal of pattern generator

2. VIDEO input

Connect the oscilloscope to the VIDEO terminal, and check that the sync signal amplitude of the video signal is approximately <0.286> [0.30]V, the amplitude of the video section is approximately <0.714> [0.70]V, the amplitude of the burst signal is approximately <0.286> [0.30]V and flat, and that the level ratio of the burst signal to the "red" signal is 0.30 : 0.66.

The video signal (color bar) used for adjusting the VTR section is shown in Fig. 5-3-3

< >: NTSC model (CCD-TRV62/TRV72/TRV82/TRV94)

[ ]: PAL model (CCD-TRV54E/TRV56E/TRV64E/TRV94E)

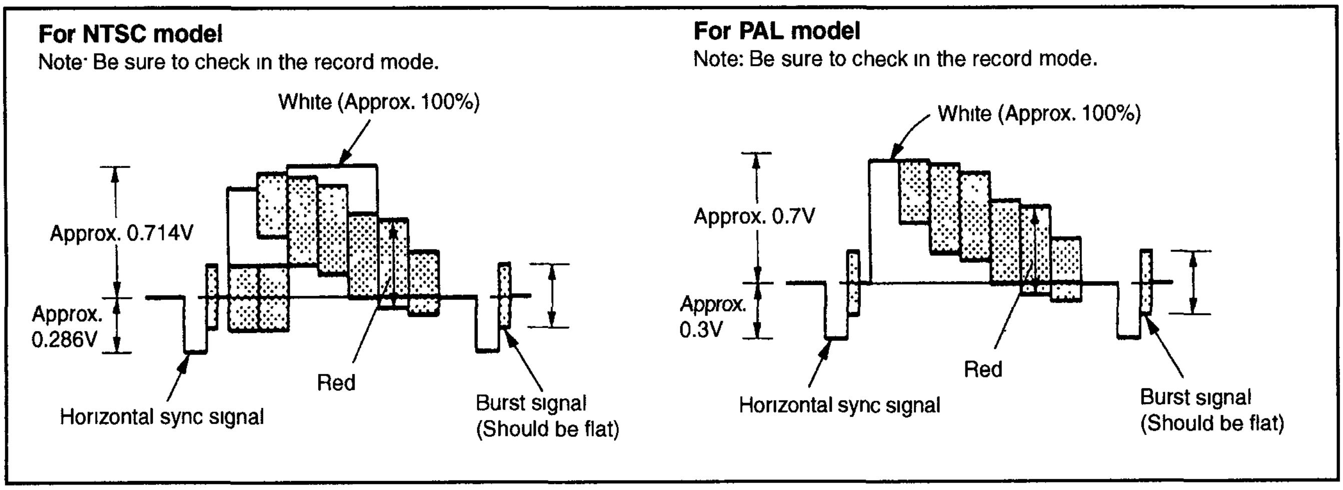

For NTSC model
Note· Be sure to check in the record mode.
White (Approx. 100%)
Approx. 0.714V
Approx. 0.286V
Red
Horizontal sync signal
Burst signal (Should be flat)
For PAL model
Note: Be sure to check in the record mode.
White (Approx. 100%)
Approx. 0.7V
Approx. 0.3V
Red
Horizontal sync signal
Burst signal (Should be flat)

Fig. 5-3-3. Color Bar Signal of Pattern Generator

3-1-6. How to Set the REC Mode in the Model without REC switch (AEP, UK model)

Note: The chroma signal cannot be input to the LCD system.

1. REC key forbidden accept mode cancel
    1. Connect the adjustment remote commander to the remote terminal.
    2. Turn on the power.
    3. Turn on the HOLD switch of the adjustment remote commander.
    4. Select the page: 0 address: 01, and set the data to 01.
    5. After memorizing data of address: 12 of page: D, Set data: FE to the address.
    6. Press PAUSE button on the adjustment remote commander.

The REC key is accepted through the above procedure.

2. REC mode setting
    1. Turn off the HOLD switch of the adjusting remote commander.
    2. Press REC buttons of the adjusting remote commander.
    3. Perform "3. Procedure after completed the adjustment" after completing adjustment .

3. Procedure after completed the adjustment
   Be sure to return the mode to REC key forbideden accept mode after adjustment.
    1. Connect the adjustment remoter commander.
    2. Turn on the power.
    3. Turn on the HOLD switch of the adjustment remote commander.
    4. Select the page: 0 address: 01, and set the data to 01.
    5. Set data memorized at step 1)-5 to address: 12 of page: D.
    6. Press PAUSE button on the adjustment remote controller.
    7. Select the page: 0 address: 01, and set the data to 00.

3-1-7. Alignment Tape

The following table lists alignment tapes which are available. Use the tape specified in the signal column for each adjustment. If the type of tape to be used for checking operations is not specified, use whichever type.

Name	Record -ing mode	Tape type	Tape speed	Usage
Tracking WR5-1NP (NTSC) WR5-1CP (PAL)	Standard 8 mm	MP	SP	Tape path adjustment Switching position adjustment
Video frequency characteristics WR5-7NE (NTSC) WR5-7CE (PAL)	Hi8	ME	SP (NTSC) LP (PAL)	Frequency characteristics adjustment
Operation check (SP mode) WR5-5NSP (NTSC) WR5-5CSP (PAL)	Standard 8 mm	MP	SP	Checking operations
Operation check (SP mode) WR5-8NSE (NTSC) WR5-8CSE (PAL)	Hi8	ME	SP	
Operation check (LP mode) WR5-4NL (NTSC) WR5-4CL (PAL)	Standard 8 mm	MP	LP	
Operation check (LP mode) WR5-8NLE (NTSC) WR5-8CLE (PAL)	Hi8	ME	LP	
AFM stereo Operation check WR5-9NS (NTSC) WR5-9CS (PAL)	Standard 8 mm	MP	SP	AFM stereo Checking operations
BPF adjustment WR5-11NS (NTSC) WR5-11CS (PAL)	Standard 8 mm	MP	SP	BPF adjustment

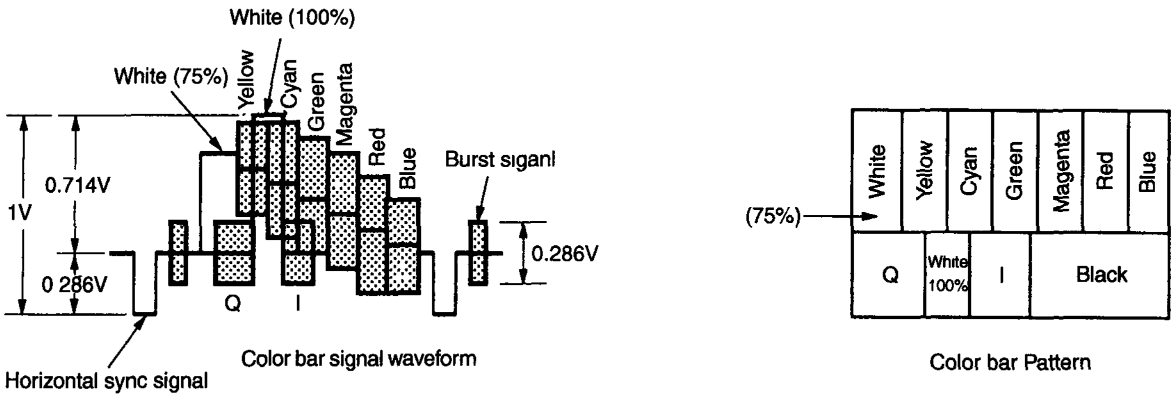
Tape type
MP.... Particle type metal tape
ME ... Evaporated type metal tape

Table 5-3-2.

Fig. 5-3-4. shows the 75% color bar signals recorded on the alignment tape.

Note: Measure using the VIDEO terminal (Terminated at 75 Ω).

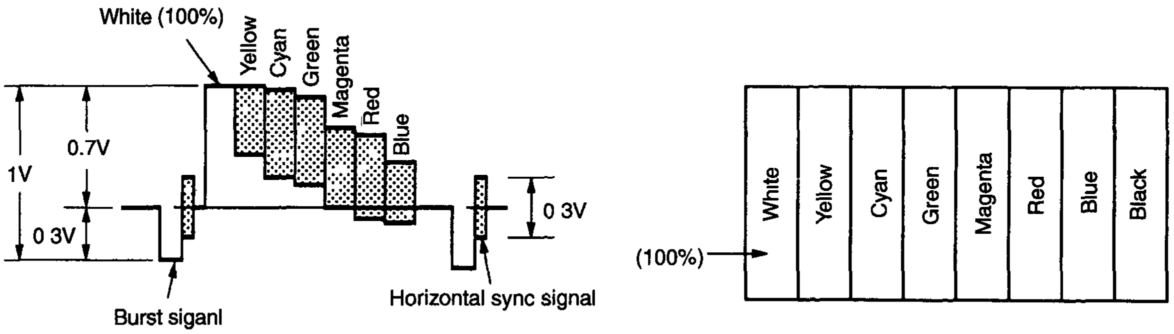
For NTSC model


White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst siganl
0.714V
1V
0.286V
0.286V
Q
I
Horizontal sync signal
White
Yellow
Cyan
Green
Magenta
Red
Blue
(75%)
Q
White 100%
I
Black

Color bar signal waveform

Color bar Pattern

For PAL model


White (100%)
Yellow
Cyan
Green
Magenta
Red
Blue
0.7V
1V
0 3V
0 3V
Burst siganl
Horizontal sync signal
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black
(100%)

Color bar signal waveform

Color bar Pattern

Fig. 5-3-4. Color Bar Signals of the Alignment Tape

3-1-8. Input/Output Level and Impedance

Video input/output

Phono jack, 1 Vp-p, 75Ω,
unbalanced, sync negative

S video input/output (Hi8 model)

4-pin mini DIN
Luminance signal:
1Vp-p, 75Ω, unbalanced, sync negative
Chrominance signal:
0.3Vp-p 75Ω, unbalanced

Audio input/output

Phono jack,
Input: –7.5 dBs, input impedance more than 47 kΩ
Output: –7.5 dBs, (at load impedance 47 kΩ), impedance less than 2.2 kΩ

3-1-9. Recording Mode (Standard 8/Hi8) switching (Hi8 model)

The record mode (Standard 8/Hi8) of this unit switches as shown in the following table. The playback mode (Standard 8/Hi8) switches automaticaly according to the recording mode of the tape played back.

Tape Used	Recording Mode
ME	Hi8
Hi8 MP	
MP	Standard 8

3-1-10. Service Mode

Additional note on adjustment

Note: After the completion of the all adjustments, cancell the service mode by either of the following ways.

1) Unplug the main power supply and remove the lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
2) After data on page: D and F is restored, return data of the address: 01 on page: 0 to 00. And when data on page: 2 or page: 3 is changed, return the data to the original condition.

1. Test mode setting

Set/release each test mode. Set data: 01 to page: 0, address: 01 before setting the data of page D and F.

Page F	Address 29

Data	Function
00	Normal
01	Test mode Various emergency prohibitions and releases Drum emergency, capstan emergency, loading motor emergency, reel emergency, tape top and end, DEW detection

Page D	Address 10

Data	Function
00	Normal
01	Camera power ON
02	VTR power ON
03	Camera+VTR power ON

* For page D and F, the data set will be recorded in the nonvolatile memory by pressing the PAUSE button on the adjusting remote commander. Take note that, in this case, the test mode will not be released even if the main power has been turned off (8.4 Vdc).

* Be sure to return this address data to 00 after completing adjustments/repairs and press the PAUSE button of the adjusting remote commander. And set data: 00 to page: 0, address: 01.

2. Emergency Memory Address

Page F	Address 10 to 1B

Address	Contents
10	1st EMG code
12	Upper: MSW code when the mechanism starts shifting the 1st time Lower: MSW code when the 1st emergency occurs
13	Lower: Target MSW code of the 1st emergency occurs
14	2nd EMG code
16	Upper: MSW code when the mechanism starts shifting the 2nd time Lower: MSW code when the 2nd emergency occurs
17	Lower: Target MSW code of the 2nd emergency occurs
18	Last EMG code
1A	Upper: MSW code when the mechanism starts shifting the last time Lower: MSW code when the last emergency occurs
1B	Lower: Target MSW code of the last emergency occurs

When there are no emergency, data 00 will be written in the above addresses (10 to 1B). When the first emergency occurs, the data corresponding to the emergency will be written in the address (10 to 13) for this first emergency. In the same way, when the second emergency occurs, the data corresponding to the emergency will be written in the address (14 to 17) for this second emergency.

The data corresponding to the emergency occurring the last will be written in the address (18 to 1B) for this last emergency.

Therefore the data of addresses 18 to 1B are renewed each time an emergency occurs.

Note 1: Be sure to rewrite the data of addresses 10 to 1B to 00 after repairs/adjustments.

Note 2: When rewriting the data, be sure to press the PAUSE buttton of the remote commander after setting the data.

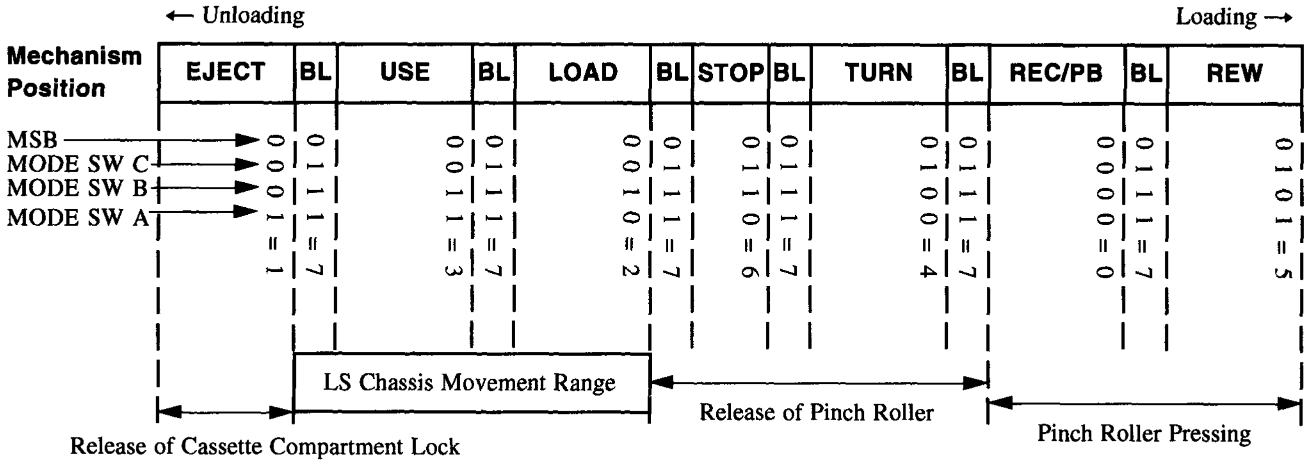
2-1. EMG CODE (Emergency Code)

The codes shown in the following table which correspond to errors that occur are recorded in addresses 10, 14, and 18.

Code	Type of Emergency
00	No error
10	Loading motor time-out during load
11	Loading motor time-out during unload
20	T reel emergency (reel slack) during unloading
21	S reel emergency (reel slack) during unloading
22	T reel emergency
23	S reel emergency
30	FG emergency at the start up of the capstan
31	FG emergency during the normal rotation of the capstan
40	FG emergency at the start up of the drum
41	PG emergency at the start up of the drum
42	FG emergency during the normal rotation of the drum
43	PG emergency during the normal rotation of the drum
44	Phase emergency during the normal rotation of the drum

2-2. MSW Codes

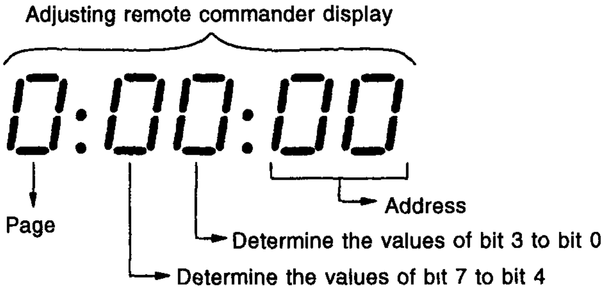
- The lower parts of the data of addresses 12, 16 and 1A represent the MSW codes (mode switch, mechanism position) when errors occurs.
- The upper parts of the data of addresses 12, 16 and 1A represent, when the mechanism position is to be moved, the MSW codes at the start of movement (when moving the loading motor).
- The lower parts of the data of addresses 13, 17 and 1B represent the MSW codes of the desired movement when the mechanism position is to be moved.


← Unloading
Loading →
Mechanism Position
EJECT
BL
USE
BL
LOAD
BL
STOP
BL
TURN
BL
REC/PB
BL
REW
MSB
MODE SW C
MODE SW B
MODE SW A
0 0 0 1 = 1
0 1 1 1 = 7
0 0 1 1 = 3
0 1 1 1 = 7
0 0 1 0 = 2
0 1 1 1 = 7
0 1 1 0 = 6
0 1 1 1 = 7
0 1 0 0 = 4
0 1 1 1 = 7
0 0 0 0 = 0
0 1 1 1 = 7
0 1 0 1 = 5
LS Chassis Movement Range
Release of Pinch Roller
Pinch Roller Pressing
Release of Cassette Compartment Lock

Mechanism Position	MSW Code	Contents
EJECT	1	Position at which the cassette compartment lock is released. The mechanism will not move any further in the unloading direction.
BL	7	BLANC code. Between two codes. The mechanism will not be stopped by this code while it is operating.
USE	3	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position.
LOAD	2	Code during loading/unloading. Code that is used while the LS chassis is moving.
STOP	6	Normal stop position. The pinch roller separates, the tension regulator returns, and the brakes of both reels turn on.
TURN	4	Position at which is used when the pendulum gear swings from S to T or from T to S.
RECP/PB	0	PB, REC, CUE, REV, PAUSE, FF positions. The pinch roller is pressed and tension regulator is on.
REW	5	REW position. REW are carried at this position. The mechanism will not move any further in the loading direction.

3. Bit value discrimination

Bit values must be discriminated using the display data of the adjusting remote commander for the following items. Use the table below to discriminate if the bit value is "1" or "0".


Adjusting remote commander display
0:00:00
Page
Address
Determine the values of bit 3 to bit 0
Determine the values of bit 7 to bit 4

Remote controller display	Bit value			
	bit 3 or bit 7	bit 2 or bit 6	bit 1 or bit 5	bit 0 or bit 4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ→ 8	1	0	0	0
9	1	0	0	1
A (Ꭿ)	1	0	1	0
B (b)	1	0	1	1
C (c)	1	1	0	0
D (d)	1	1	0	1
Ⓑ→ E (E)	1	1	1	0
F (F)	1	1	1	1

(Example) If the remote commander display data is "8E", bit values from bit7 to bit4 can be discriminated from column Ⓐ, and those from bit3 to bit0 from column Ⓑ.

4. Input/output selection check

Page 3	Address 16

Bit	Function	When bit value = 1	When bit value = 0
0	Not S video terminal input		S video terminal input
1	Not video terminal input		Video terminal input
2	Audio terminal monaural	Monaural	
3			
4			
5			
6			
7			

Using method:

1) Select address: 16 of page: 3.
2) By discriminating the bit value of the display data, the state of the input/output selection can be discriminated.

5. Condensation, head clogging check

Page 3	Address 17

Bit	Function	When bit value = 1	When bit value = 0
0	Condensation state (1 hour preservation)	Condensation	
1	Head clogging	Head clogging	
2			
3			
4			
5			
6			
7			

Using method:

1) Select address: 17 of page: 3.
2) By discriminating the bit value of the display data, the state of the VTR can be discriminated.

6. VTR state check (1)

Page 3	Address 18

Bit	Function	When bit value = 1	When bit value = 0
0	Video/audio circuit PB mode	PB mode	REC/E-E mode
1			
2			
3			
4	Head clog detection when REC	Head clog	
5			
6	Recorded tape playback	Playback	
7	Capstan rotation	Rotation	

Using method:

1) Select address. 18 of page: 3.
2) By discriminating the bit value of the display data, the state of the VTR can be discriminated.

7. VTR state check (2)

Page 3	Address 19

Bit	Function	When bit value = 1	When bit value = 0
0	Eject state	Eject state	
1	Cassette insertion state	Cassette in	
2	Cassette accidental erasure prevention	Accidental erasure prevention state	
3	Tape type	ME	MP
4	Tape type	Hi8 MP	NORMAL MP, ME
5	Crystal variable speed playback	Variable speed playback	
6	Variable speed playback mode	Variable speed playback mode	
7	DRUM	DRUM rotation	Stop

Using method:

1) Select address: 19 of page: 3.
2) By discriminating the bit value of the display data, the state of the VTR can be discriminated

8. VTR state check (3)

Page 3	Address 1A

Bit	Function	When bit value = 1	When bit value = 0
0	Playback tape recording mode	Hi8	Standard 8
1			
2	Audio mode	Monaural	Stereo
3			
4			
5			
6			
7			

Using method:

1) Select address: 1A of page: 3.
2) By discriminating the bit value of the display data, the state of the VTR can be discriminated.

9. Record of Use Check

Page 3	Address E0 to E9

Address	Function		Remarks
E0	Service status		For checking reset. Normal = "FF". Reset: "00"
E1	Drum rotation	Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
E2	counted time	Hour (L)	10th place digit and 1st place digit of counted time (decimal digital)
E3	(BCD code)	Minute	
E4	User initial power	Year	After setting the clock, set the date of power on next
E5	on date	Month	
E6	(BCD code)	Day	
E7	Final condensation	Year	
E8	occurrence date	Month	
E9	(BCD code)	Day	

Using method:

1) The record of use data is displayed at addresses: E0 to E9 of page 3.

Note: This data will be erased when the coin lithium battery is removed (reset).

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENTS

1. Initialization of D, E, F Page Data

If the D, E, F page data is erased due to some reason, perform "1-2. INITIALIZATION OF D, E, F PAGE DATA", of "5-1. CAMERA SECTION ADJUSTMENTS".

2. Battery End Adjustment (VC-190 board)

Set the battery end voltage.
If the voltage is incorrect, the life of the battery will shorten. The image at the battery end will also be rough.

Mode	Camera record
Signal	Arbitrary
Measurement Point	LCD display of the adjusting remote control unit
Measuring Instrument	
Adjustment Page	D
Specified Value	28 to 2C, 35

Note: The lens block and cabinet (R) must be connected.

Switch setting
1) AUTO FOCUS switch .... OFF
2) VF PW-SAVE (Menu display) ... . . OFF
   (Color EVF model)
3) LCD screen .... Closed

Connection:
1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-3-5.

Adjusting method:
1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.1 ± 0 1 Vdc.
2) Turn off the regulated power supply.
3) Turn on the HOLD switch of the adjusting remote commander.
4) Turn on the regulated power supply
5) Load a cassette, and set to the camera recording mode.
6) Set data: 01 to page: 0, address: 01.
7) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.30 ± 0 01 Vdc.
8) Select page: 3, address: 15, read the adjusting remote commander display data, and this data is named Dref.
9) Set data Dref to page: D, address: 28, and press the PAUSE button of the adjusting remote commander.
10) Set the Dref to page: D, address: 35, and press the PAUSE button of the adjusting remote commander.
11) Convert Dref to decimal notation, and obtain Dref′ (Refer to Table 5-1-5. "Hexadecimal notation – decimal notation conversion table")
12) Calculate D29′, D2A′, D2B′ and D2C′ using following equations (decimal notation calculation).
    D29′ = Dref′+8
    D2A′ = Dref′+32
    D2B′ = Dref′+53
    D2C′ = Dref′+64
13) Convert D29′, D2A′, D2B′ and D2C′ to hexadecimal notation, and obtain D29, D2A, D2B and D2C.
14) Set data: D29 to page: D, address: 29, and press the PAUSE button of the adjusting remote commander.
15) Set data: D2A to page: D, address: 2A, and press the PAUSE button.
16) Set data: D2B to page: D, address: 2B, and press the PAUSE button
17) Set data: D2C to page: D, address: 2C, and press the PAUSE button
18) Set data: 00 to page: 0, address: 01.

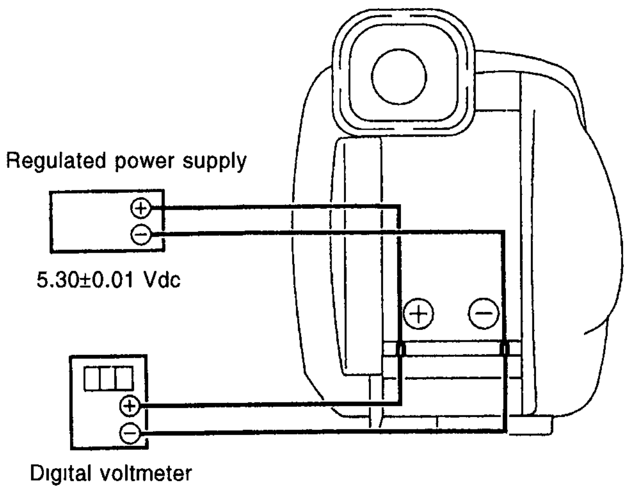


Fig. 5-3-5.

3-3. SERVO SYSTEM ADJUSTMENTS

1. CAP FG Offset Adjustment (VC-190 board)

Improve the capstan servo characteristic If it is not correct, jitters will increase

Mode	Playback (SP mode)
Signal	Alignment tape: For operation check (WR5-5NSP(NTSC)) (WR5-5CSP(PAL))
Measurement Point	Pin ④ of CN207 (CAP FG)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	3A
Specified Value	Duty = 50 ± 1.5%

Adjusting method:

1) Set data: 01 to page: 0, address: 01
2) Set data: 81 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander
3) Check that the data of page: 2, address: 02 is 01.
4) Check that Duty of CAP FG signal satisfies the specified value If not, set data: 00 to page: 2, address: 01, and press the PAUSE button, and then, repeat steps 2) to 4)
5) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander
6) Set data: 00 to page: 0, address: 01.

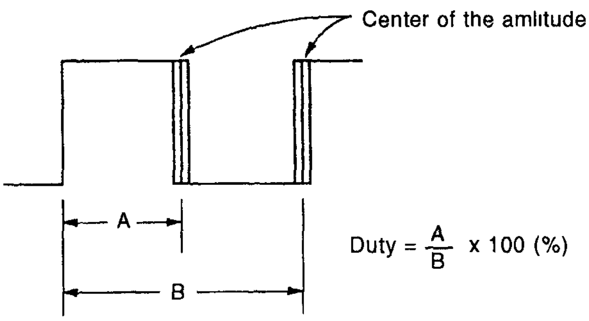


Fig. 5-3-6.

2. Switching Position Adjustment (VC-190 board)

If deviated in this case causes switching noise or jitter on the played back screen

Mode	Playback
Signal	Alignment tape: For tracking adjustment (WR5-1NP (NTSC)) (WR5-1CP (PAL))
Measurement Point	CH1: Pin ③ of CN207 (RF SWP) CH2: Pin ⑥ of CN207 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	36, 37
Specified Value	t1 = 0 ± 10 μsec

Note : NTSC model : CCD-TRV62/TRV72/TRV82/TRV92
PAL model : CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjusting method:

1) Set data: 01 to page: 0, address: 01
2) Change the data of page: F, address: 37 and minimize "t1", and press the PAUSE button of the adjusting remote commander. (Coarse adjustment)
3) Change the data of page: F, address: 36, and adjust so that the switching position (t1) becomes the specified value. (Fine adjustment)
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 0, address: 01.

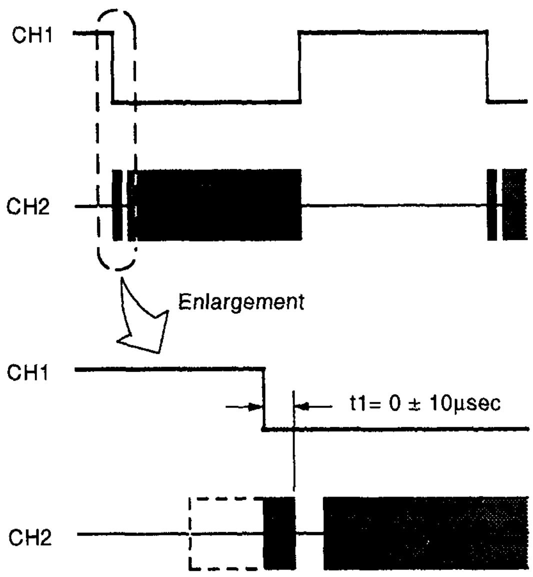


Fig. 5-3-7.

3. NTSC LP mode Switching Position Adjustment (VC-190 board) (CCD-TRV62/TRV72/TRV82/TRV94)

If deviated in this case causes switching noise or jitter on the LP mode played back screen.

Mode	Playback
Signal	Alignment tape: For tracking adjustment (WR5-1NP)
Measurement Point	CH1: Pin ③ of CN207 (RF SWP) CH2: Pin ⑥ of CN207 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	38, 39
Specified Value	t1 = 0 ± 10 µsec

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 40 to page: F, address: 29, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 39 and minimize "t1", and press the PAUSE button of the adjusting remote commander. (Coarse adjustment)
4) Change the data of page: F, address: 38, and adjust so that the switching position (t1) becomes the specified value. (Fine adjustment)
5) Press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: F, address: 29, and press the PAUSE button of the adjusting remote commander
7) Set data: 00 to page: 0, address: 01.

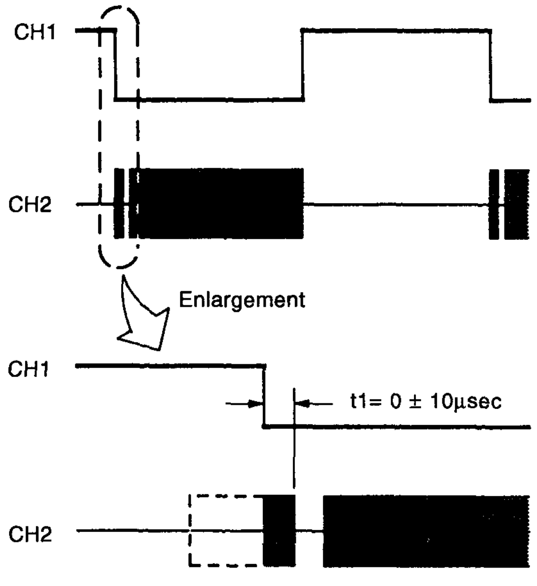


Fig. 5-3-8.

3-4. VIDEO SYSTEM ADJUSTMENTS

Video system adjustments must be performed in the following order.

[Adjusting Order]

1. 28 MHz origin oscillation adjustment
2. Filter fo adjustment
3. Y OUT level adjustment
4. C OUT level adjustment
5. RP filter f0 adjustment
6. AFC f0 adjustment
7. NTSC Hi8 REC Y current adjustment
8. PAL Hi8 REC Y current adjustment
9. PAL Standard8 REC Y current adjustment
10. NTSC Hi8 REC L level adjustment
11. PAL Hi8 REC L level adjustment
12. PAL Standard8 REC L level adjustment
13. REC C current adjustment

1. 28 MHz Origin Oscillation Adjustment (VC-190 board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Mode	VTR stop
Subject	Arbitrary
Measurement Point	Pin ⑫ of IC202 or Pin ⑯ of IC203
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	3B
Specified Value	f = 14318181 ± 71 Hz (NTSC) f = 14187500 ± 70 Hz (PAL)

Note 1: If the x2 frequency is displayed, insert a 1 kΩ resistor between the measuring point and probe.

Note 2 : NTSC model : CCD-TRV62/TRV72/TRV82/TRV92
PAL model . CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 41 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 3B, and set the oscillation frequency (f) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

2. Filter fo Adjustment (VC-190 board)

Minimize the chroma signal residual components during composite video signal input.

Mode	VTR stop
Signal	Color bar (Video input)
Measurement Point	Pin ⑨ of CN207 (EZ I/O)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	5A
Specified Value	Minimum residual chroma signal components

Note: Do not insert a plug into the S video terminal. (Hi8 model)

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 33 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 5A, and minimize the residual chroma signal components (A).
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

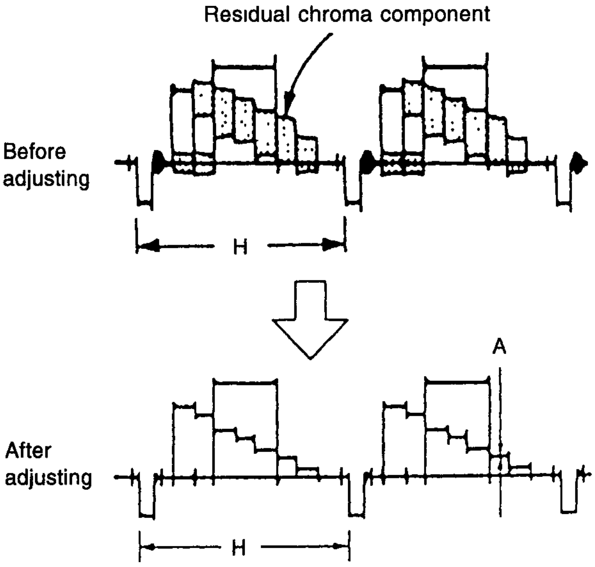


Fig. 5-3-9.

3. Y OUT Level Adjustment (VC-190 board)

Set the Y signal output level.

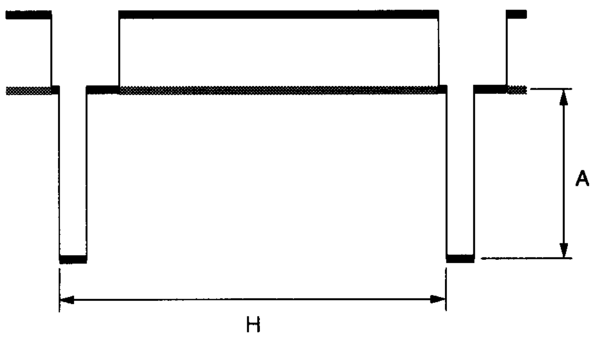
Mode	VTR stop
Subject	Arbitrary
Measurement Point	Hi8 model: Y signal terminal of S VIDEO terminal (75Ω terminated) Standard 8 model: VIDEO terminal (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	56
Specified Value	A = 286 ± 5 mV (NTSC) A = 300 ± 5 mV (PAL)

Note: Insert the plug into the S video terminal. (Hi8 model)

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 41 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 56, and set the SYNC level (A) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01

Hi8 model



Standard 8 model

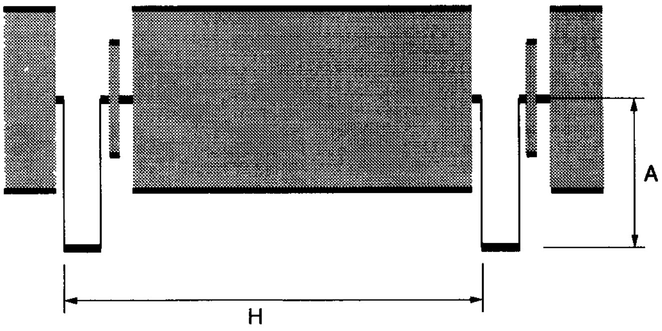


Fig. 5-3-10.

4. C OUT Level Adjustment (VC-190 board)

Set the chroma signal output level.

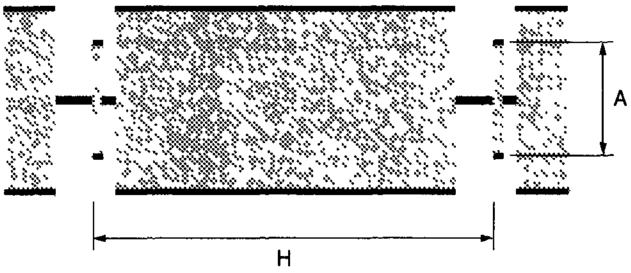
Mode	VTR stop
Subject	Arbitrary
Measurement Point	Hi8 model: Chroma signal terminal of S VIDEO terminal (75Ω terminated) Standard 8 model VIDEO terminal (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	58
Specified Value	A = 286 ± 5 mV (NTSC) A = 300 ± 5 mV (PAL)

Note: Insert the plug into the S video terminal. (Hi8 model)

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 41 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 58, and set the burst level (A) to the specified value.
4) Press the PAUSE button of the adjusting remote commander
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

Hi8 model



Standard 8 model

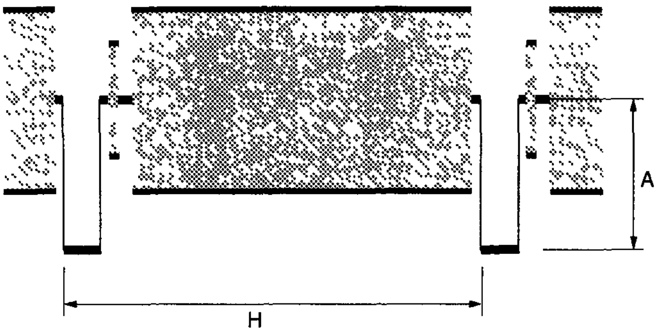


Fig. 5-3-11.

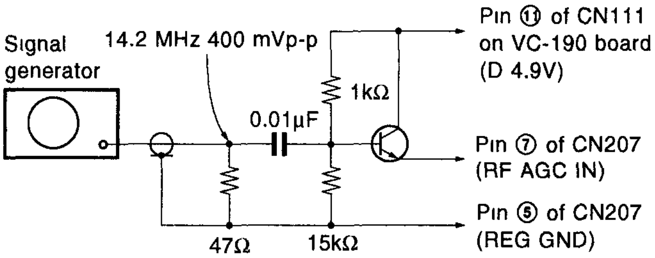
5. RP Filter fo Adjustment (VC-190 board)

Adjust the LPF of the playback RF amplifier.

Mode	VTR stop
Subject	Arbitrary
Measurement Point	Pin ⑮ of CN207 (RF AGC OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	5B
Specified Value	A = Below 10 mVp-p

Connection:

1) Input a 14 2 MHz, 400 mVp-p CW signal to Pin ⑦ of CN207 (RF AGC IN)



Transistor : General NPN transistor (2SC403, etc)
47Ω resistor : 1-249-401-11
1kΩ resistor : 1-249-417-11
15kΩ resistor : 1-249-431-11
0.01µF capacitor : 1-101-004-00

Fig. 5-3-12.

Adjusting method.

1) Set data: 01 to page: 0, address: 01.
2) Set data: 35 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander
3) Memorize the data of page: D, address: 12 only for Standard 8 models, set data: 8E, and press the PAUSE button of the adjusting remote commander.
4) Change the data of page: F, address: 5B, and minimize the 14.2 MHz signal level (A).
5) Press the PAUSE button of the adjusting remote commander.
6) Set the data memorized in step 3) to page: D, address: 12 only for Standard 8 models, and press the PAUSE button of the adjusting remote commander
7) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
8) Set data: 00 to page: 0, address. 01.

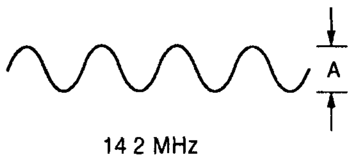


Fig. 5-3-13.

6. AFC fo Adjustment (VC-190 board)

Adjust the pull-in range of the A/D converted clock generator during playback.

Mode	VTR stop
Signal	Color bar (Video input)
Measurement Point	Pin ⑯ of CN207 (AFC fo)
Measuring Instrument	Digital voltmeter
Adjustment Page	F
Adjustment Address	57
Specified Value	A = 2.2 ± 0.05 Vdc

Note: Do not insert the plug in the S video terminal. (Hi8 model)

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 31 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 57, and set the DC voltage (A) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

7. NTSC Hi8 REC Y Current Adjustment (VC-190 board)
(CCD-TRV62/TRV72/TRV82/TRV94)

Adjust the Y FM signal recording current.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement point	Pin ② of CN207 (REC RF)
Measuring instrument	Oscilloscope (20 MHz BW LIMIT: OFF)
Adjustment page	F
Adjustment address	60, 61, 62, 63
Specified value	A = 140 ± 5 mV

Adjusting method:

1) Insert a tape, and set to recording mode.
2) Set data: 01 to page: 0, address: 01.
3) Note down the data of page: F, address: 69, set data: FF, and press the PAUSE button of the adjusting remote commander.
4) Set data: 41 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
5) Change the data of page: F, address: 61, and set the REC Y signal level (A) to the specified value.
6) Press the PAUSE button of the adjusting remote commander.
7) Read the data (D_{61}) of page: F, address: 61.
8) Convert D_{61} to a decimal number, to obtain D_{61}'.
   (Refer to Table 5-1-5. Hexadecimal-Decimal conversion Table.)
11) Calculate the adjustment data (decimal) from the following equations (decimal calculation), convert it to a hexadecimal number, and input each adjustment address.
   Address: 60 $D_{60}' = D_{61}'$
   Address: 62 $D_{62}' = D_{61}' + 13$
   Address: 63 $D_{63}' = D_{61}' + 13$
   Note: After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
12) After setting data noted down at step 3) for page: F, address: 69, press the PAUSE button of the adjusting remote commander.
13) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
14) Set data: 00 to page: 0, address: 01.

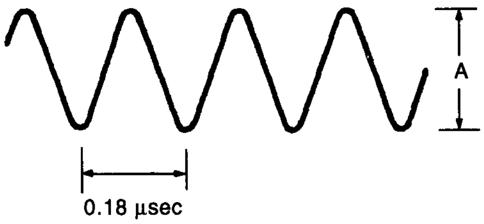


Fig. 5-3-14.

8. PAL Hi8 REC Y Current Adjustment (VC-190 board) (CCD-TRV64E/TRV94E)

Adjust the Y FM signal recording current.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement point	Pin ② of CN207 (REC RF)
Measuring instrument	Oscilloscope (20 MHz BW LIMIT: OFF)
Adjustment page	F
Adjustment address	60, 61, 62, 63
Specified value	A = 185 ± 5 mV

Adjusting method:

1) Insert a tape, and set to recording mode
2) Set data: 01 to page: 0, address: 01.
3) Note down the data of page: F, address: 69, set data: FF, and press the PAUSE button of the adjusting remote commander.
4) Set data: 41 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
5) Change the data of page: F, address: 61, and set the REC Y signal level (A) to the specified value.
6) Press the PAUSE button of the adjusting remote commander.
7) Read the data (D61) of page: F, address: 61
8) Set D61 to address: 60, 62 and 63 of page: F.
   Note: After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
9) After setting data noted down at step 3) for page: F, address: 69, press the PAUSE button of the adjusting remote commander.
10) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
11) Set data: 00 to page: 0, address: 01.

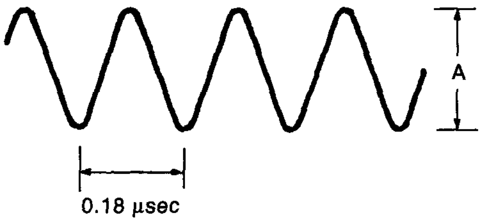


Fig. 5-3-15.

9. PAL Standard8 REC Y Current Adjustment (VC-190 board) (CCD-TRV54E/TRV56E)

Adjust the Y FM signal recording current.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement point	Pin ② of CN207 (REC RF)
Measuring instrument	Oscilloscope (20 MHz BW LIMIT: OFF)
Adjustment page	F
Adjustment address	60, 61, 62, 63
Specified value	A = 160 ± 5 mV

Adjusting method:

1) Insert a tape, and set to recording mode.
2) Set data: 01 to page. 0, address: 01.
3) Note down the data of page: F, address: 6D, set data: FF, and press the PAUSE button of the adjusting remote commander.
4) Set data: 45 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
5) Change the data of page: F, address: 61, and set the REC Y signal level (A) to the specified value.
6) Press the PAUSE button of the adjusting remote commander.
7) Read the data (D61) of page: F, address: 61.
8) Set D61 to address: 60, 62 and 63 of page: F.
   Note: After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
9) After setting data noted down at step 3) for page: F, address: 6D, press the PAUSE button of the adjusting remote commander.
10) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
11) Set data: 00 to page: 0, address: 01.

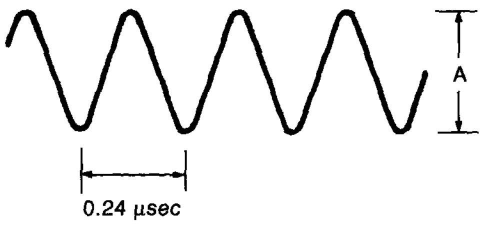


Fig. 5-3-16.

10. NTSC Hi8 REC L Level Adjustment
(VC-190 board)
(CCD-TRV62/TRV72/TRV82/TRV94)

Set the recording levels of the REC AFM signal and REC ATF signal. If the level is too low, the audio S/N will deteriorate, tracking will not be stable, or SP/LP will not be discriminated properly. If too high, color beets will be produced on the self-recording/playback image.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement point	Pin ② of CN207 (REC RF)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	68 to 6F
Specified value	A = 8.4 ± 0.4 mV

Note: Do not insert a plug into the AUDIO (R) terminal.

Connection:

1) Remove C1060 (0.01µF , near Pin ⑤ of IC101).

Note: After completing "REC L Level Adjustment" and "REC C Current Adjustment", replace C1060 with new parts (1-162-970-11 CERAMIC CHIP 0.01µF 10% 25V).

2) Connect Pin (63) of IC101 and GND with a 0.01µF capacitor.
   0.01µF capacitor: 1-101-004-00

Adjusting method:

1) Insert a Hi8 ME tape, and set to recording mode.
2) Set data: 01 to page: 0, address: 01.
3) Set data: FF to page: F, address: 68, and press the PAUSE button of the adjusting remote commander.
4) Change the data of page: F, address: 69, and set the REC AFM signal level (A) to the specified value.
5) Press the PAUSE button of the adjusting remote commander.
6) Read the data (D69) of page: F, address: 69.
7) Convert D69 to a decimal number, to obtain D69′.
   (Refer to Table 5-1-5. Hexadecimal-Decimal conversion Table.)
8) Calculate the adjustment data (decimal) from the following equations (decimal calculation), convert it to a hexadecimal number, and input each adjustment address.
   Address: 68 D68′ = D69′
   Address: 6A D6A′ = D69′ -11
   Address: 6B D6A′ = D69′ -11
   Address: 6C D6C′ = D69′ + 16
   Address: 6D D6D′ = D69′ + 16
   Address: 6E D6E′ = D69′ + 16
   Address: 6F D6F′ = D69′ + 16

   Note: After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
9) Set data: 00 to page: 0, address: 01.
10) Perform "REC C Current Adjustment".

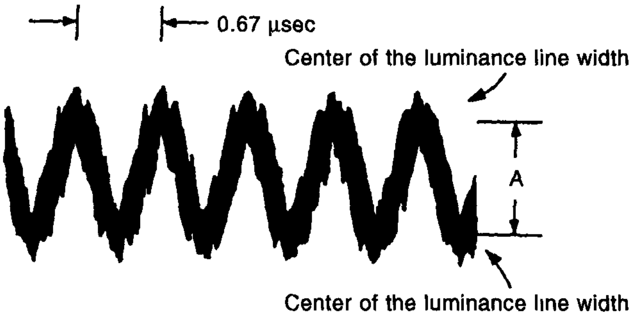

0.67 µsec
Center of the luminance line width
A
Center of the luminance line width

Fig. 5-3-17.

11. PAL Hi8 REC L Level Adjustment (VC-190 board) (CCD-TRV64E/TRV94E)

Set the recording levels of the REC AFM signal and REC ATF signal. If the level is too low, the audio S/N will deteriorate, tracking will not be stable, or SP/LP will not be discriminated properly. If too high, color beets will be produced on the self-recording/playback image.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement point	Pin ② of CN207 (REC RF)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	68 to 6F
Specified value	A = 9.8 ± 0.4 mV

Note: Do not insert a plug into the AUDIO (R) terminal

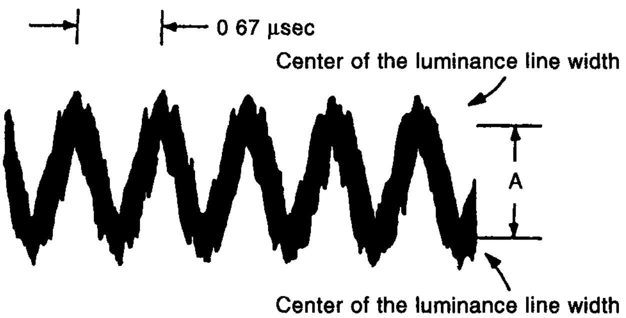


Fig. 5-3-18.

Connection:

1) Remove C1060 (0.01µF , near Pin ⑤ of IC101).
   Note: After completing “REC L Level Adjustment” and “REC C Current Adjustment”, replace C1060 with new parts (1-162-970-11 CERAMIC CHIP 0.01µF 10% 25V).
2) Connect Pin (63) of IC101 and GND with a 0.01µF capacitor.
   0.01µF capacitor: 1-101-004-00

Adjusting method:

1) Insert a Hi8 ME tape, and set to recording mode.
2) Set data: 01 to page: 0, address: 01.
3) Set data: FF to page: F, address: 68, and press the PAUSE button of the adjusting remote commander.
4) Change the data of page: F, address: 69, and set the REC AFM signal level (A) to the specified value.
5) Press the PAUSE button of the adjusting remote commander.
6) Read the data (D69) of page: F, address: 69.
7) Convert D69 to a decimal number, to obtain D69′.
   (Refer to Table 5-1-5. Hexadecimal-Decimal conversion Table.)
8) Calculate the adjustment data (decimal) from the following equations (decimal calculation), convert it to a hexadecimal number, and input each adjustment address.
   Address: 68 D68′ = D69′
   Address: 6A D6A′ = D69′
   Address: 6B D6B′ = D69′
   Address: 6C D6C′ = D69′ + 11
   Address: 6D D6D′ = D69′ + 11
   Address: 6E D6E′ = D69′ + 11
   Address: 6F D6F′ = D69′ + 11
   Note: After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
9) Set data: 00 to page: 0, address: 01.
10) Perform “REC C Current Adjustment”.

12. PAL Standard8 REC L Level Adjustment (VC-190 board) (CCD-TRV54E/TRV56E)

Set the recording levels of the REC AFM signal and REC ATF signal. If the level is too low, the audio S/N will deteriorate, tracking will not be stable, or SP/LP will not be discriminated properly. If too high, color beets will be produced on the self-recording/playback image.
Adjust the REC chroma signal recording current.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement point	Pin ② of CN207 (REC RF)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	68 to 6F
Specified value	A = 7.2 ± 0.4 mV

Note: Do not insert a plug into the AUDIO (R) terminal.

Connection:

1) Remove C1060 (0.01µF , near Pin ⑤ of IC101).
   Note: After completing "REC L Level Adjustment" and "REC C Current Adjustment", replace C1060 with new parts (1-162-970-11 CERAMIC CHIP 0.01µF 10% 25V).
2) Connect Pin (63) of IC101 and GND with a 0.01µF capacitor.
   0.01µF capacitor: 1-101-004-00

Adjusting method:

1) Insert a Standard MP tape, and set to recording mode.
2) Set data: 01 to page: 0, address: 01.
3) Set data: FF to page: F, address: 6C, and press the PAUSE button of the adjusting remote commander.
4) Change the data of page: F, address: 6D, and set the REC AFM signal level (A) to the specified value.
5) Press the PAUSE button of the adjusting remote commander.
6) Read the data (D6D) of page: F, address: 6D.
7) Set D6D to address: 68 to 6F of page: F.
   Note: After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
8) Set data: 00 to page: 0, address: 01.
9) Perform "REC C Current Adjustment".

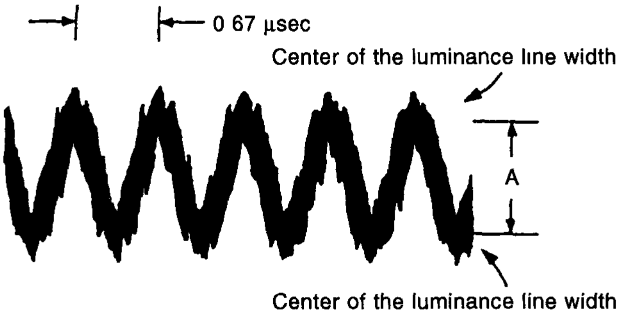

0 67 µsec
Center of the luminance line width
A
Center of the luminance line width

Fig. 5-3-19.

13. REC C Current Adjustment (VC-190 board)

Set the recording current level of REC Chroma signal. If it is lower than its normal level, chroma signal noise in played back picture will increase. If it is set higher, Y signal noises will increase and white modulation noises will be produced.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement point	Pin ② of CN207 (REC RF)
Measuring instrument	Oscilloscope
Adjustment page	F
Adjustment address	72
Specified value	A = 30.3 ± 1.1 mV (NTSC Hi8) A = 33.7 ± 1.2 mV (PAL Hi8) A = 24.5 ± 0.9 mV (PAL Standard 8)

Note: NTSC Hi8 model: CCD-TRV62/TRV72/TRV82/TRV94
PAL Hi8 model: CCD-TRV64E/TRV94E
PAL Standard8 model: CCD-TRV54E/TRV56E

Connection:

1) Remove C1060 (0.01µF , near Pin ⑤ of IC101).

Note: After completing "REC L Level Adjustment" and "REC C Current Adjustment", replace C1060 with new parts (1-162-970-11 CERAMIC CHIP 0.01µF 10% 25V).

2) Connect Pin ① of IC101 and GND with a 0.01µF capacitor.
   0.01µF capacitor: 1-101-004-00
3) Connect Pin (63) of IC101 and GND with a 0.01µF capacitor.
   0.01µF capacitor: 1-101-004-00

Adjusting method.

1) Insert a tape, and set to recording mode.
2) Set data: 01 to page: 0, address: 01.
2) Set data: 30 to page: 2, address: 61, and press the PAUSE button of the adjusting remote commander.
3) Set data: <41> [45] to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
   < >: Hi8 model
   [ ]: Standard8 model
6) Change the data of page: F, address: 72, and set the REC chroma signal level (A) to the specified value.
7) Press the PAUSE button of the adjusting remote commander.
8) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
9) Set data: 00 to page: 2, address: 61, and press the PAUSE button of the adjusting remote commander.
10) Set data: 00 to page: 0, address: 01.

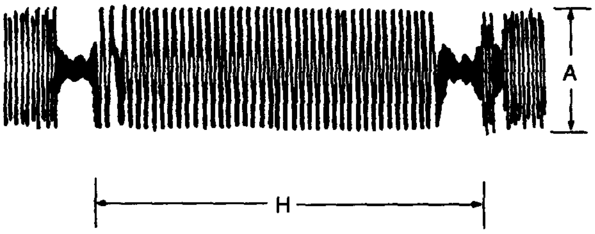


Fig. 5-3-20.

3-5. IR Transmitter Adjustments (CCD-TRV62/TRV72/TRV82)

Adjust using a IR receiver jig.

Switch setting:
LASER LINK . . . . ON (Red LED is lit)

1. IR Video Carrier Frequency Adjustment (MI-27/28 board)

Mode	Camera standby
Subject	Arbitrary
Measuring point	TP607 of IR receiver jig (Or Pin ⑯ of IC361 of MI-27/28 board)
Measuring instrument	Frequency counter
Adjusting page	F
Adjusting address	76
Specified value	f = 11.85 ± 0.05 MHz

Connection of Equipment
Connect the measuring devices as shown in the following figure, and adjust

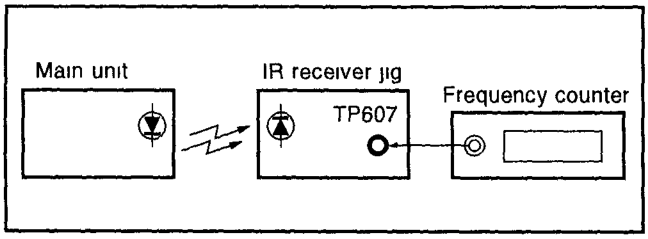


Fig. 5-3-21.

Adjusting method:
1) Set data: 01 to page: 0, address: 01
2) Set data: 37 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander
3) Change the data of page. F, address: 76, and set the video carrier frequency (f) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data. 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander
6) Set data: 00 to page: 0, address: 01.

2. IR Video Deviation Adjustment (MI-27/28 board)

Mode	Camera standby
Subject	Arbitrary
Measuring point	VIDEO OUT terminal of IR receiver jig (Terminated at 75Ω)
Measuring instrument	Oscilloscope
Adjusting page	F
Adjusting address	73
Specified value	$A = 0.87^{+0.04}_{-0.10}$ V

Connection of Equipment
Connect the measuring devices as shown in the following figure, and adjust

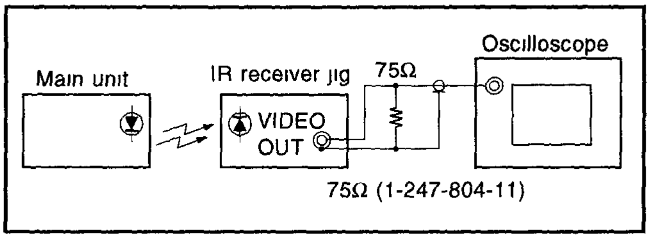


Fig. 5-3-22.

Adjusting method:
1) Set data· 01 to page: 0, address: 01.
2) Set data: 39 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address· 73, and set the video signal amplitude (A) to the specified value
4) Press the PAUSE button of the adjusting remote commander
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander
6) Set data: 00 to page: 0, address· 01

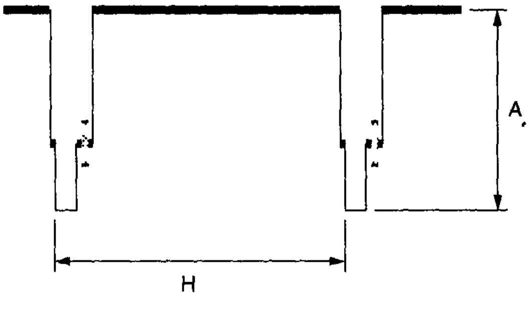


Fig. 5-3-23.

3. IR Audio Deviation Adjustment (MI-27/28 board)

Mode	VTR recording
Signal	Audio signal: 400 Hz, -7.5 dBs: Left or right of audio input/output terminal Video signal: Color bar signal: Video input/output terminal
Measuring point	AUDIO OUT L terminal and AUDIO OUT R terminal of IR receiver jig (Terminated at 47 kΩ)
Measuring instrument	Audio level meter
Adjusting page	F
Adjusting address	75
Specified value	-7.5 ± 0.5 dBs

Connection of Equipment

Connect the measuring devices as shown in the following figure, and adjust

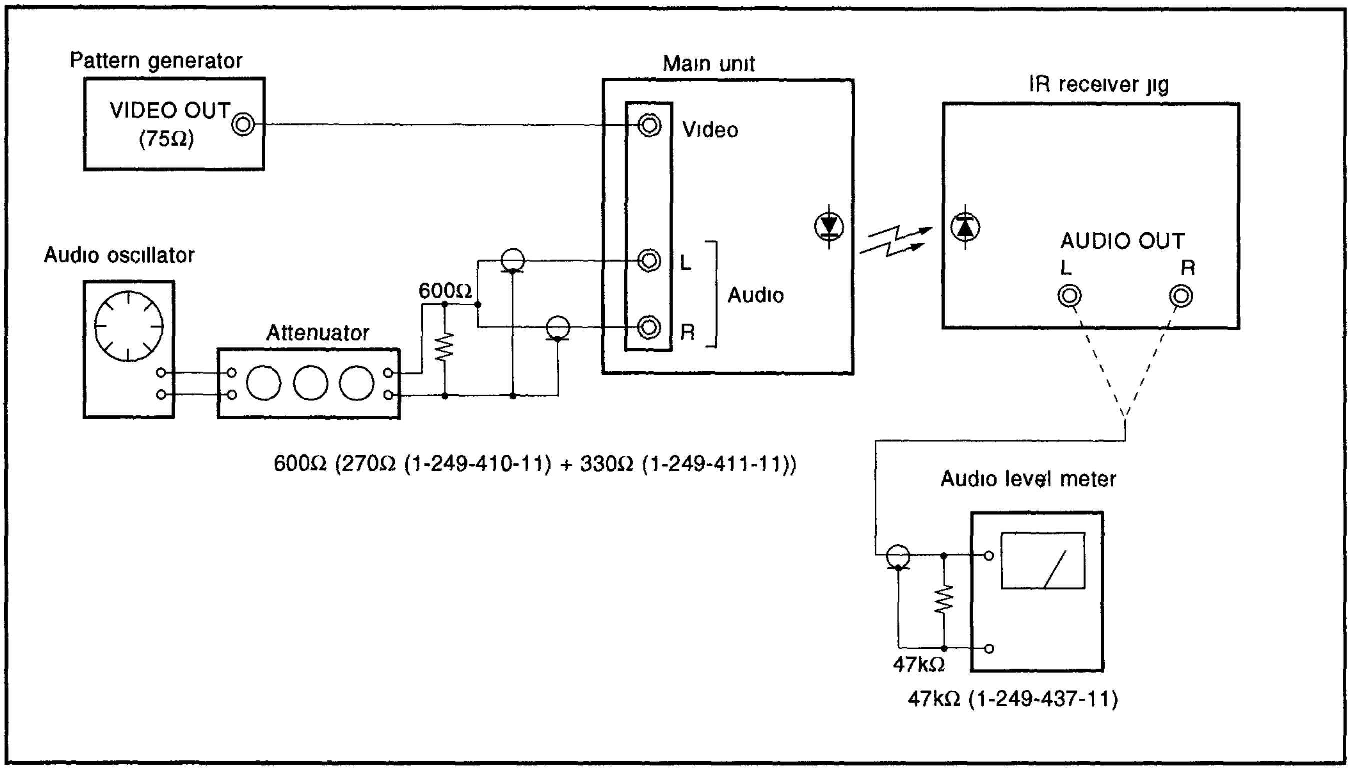

Pattern generator
VIDEO OUT
(75Ω)
Main unit
Video
L
R
Audio
IR receiver jig
AUDIO OUT
L
R
Audio oscillator
600Ω
Attenuator
600Ω (270Ω (1-249-410-11) + 330Ω (1-249-411-11))
Audio level meter
47kΩ
47kΩ (1-249-437-11)

Fig. 5-3-24.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Connect the audio level meter to the AUDIO OUT L terminal of the IR receiver jig.
3) Change the data of page: F, address: 75, and set the audio signal level to the specified value.
4) Press the PAUSE button of the adjusting remote commander
5) Connect the audio level meter to the AUDIO OUT R terminal of the IR receiver jig.
6) Check that the audio level is within the specified value. If outside, repeat from step 2.
7) Set data: 00 to page: 0, address: 01.

3-6. AUDIO SYSTEM ADJUSTMENT

- Perform the adjustment using the color bar signal as a video signal input for VIDEO terminal.
- The items to be adjusted for the R channel will be indicated within the [ ], in regard to the adjusting items to be adjusted for both L and R channels.
- Set the Hi-Fi sound switch in the menu display to "STEREO" position unless specified otherwise.

Note:

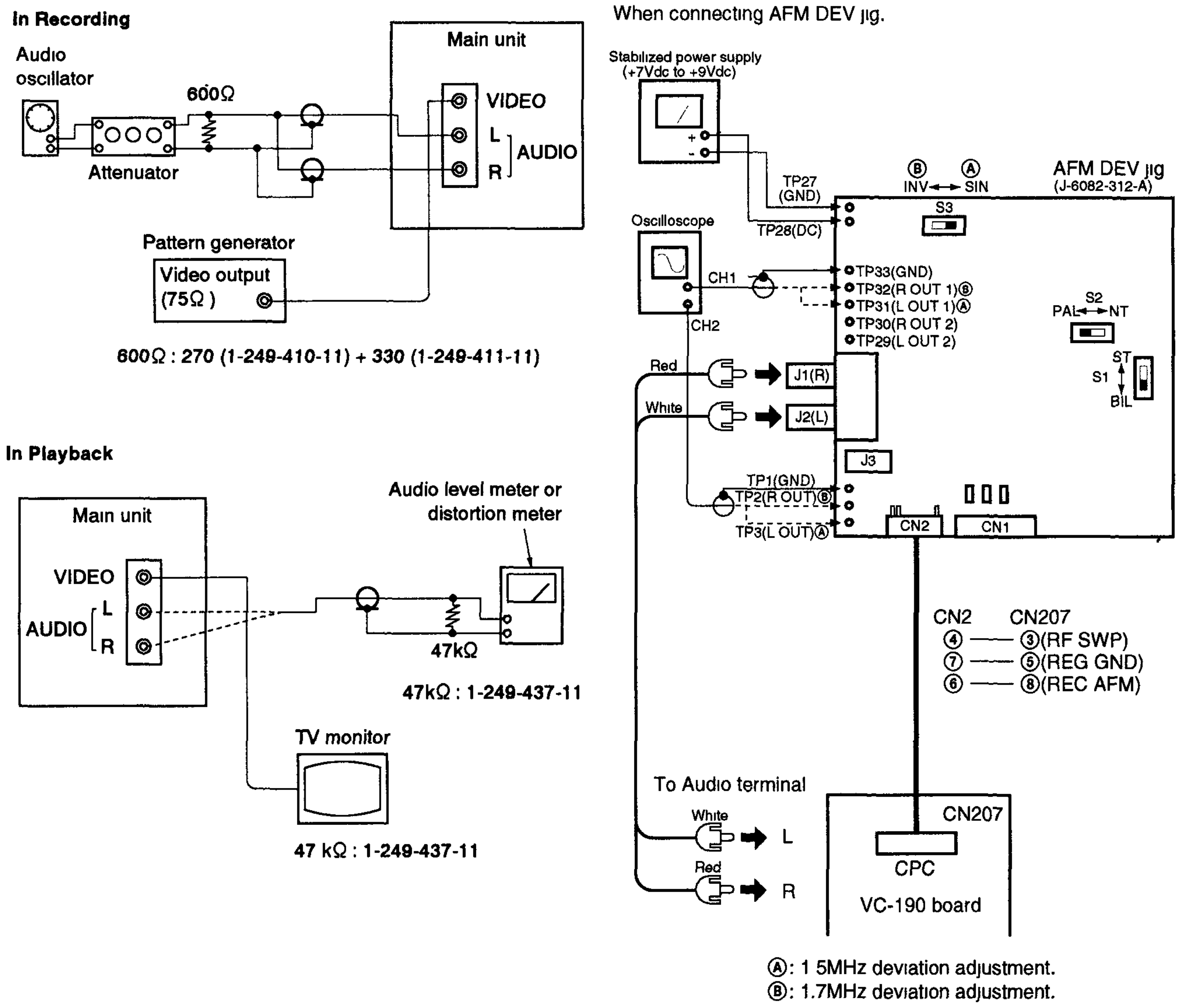
1) When inputting the audio signal, input the same signal to both the L and R channels, unless specified otherwise.
2) Be sure to insert the plug (Shorting plug or dummy plug, etc) into the AUDIO terminal (Right) If the plug is not inserted, the monaural mode well be set, and correct adjustments can not be carried out.
   [Monaural mode]
   During recording........... REC AFM RF 1.7MHz carriear will not be output.
   During playback .... The L+R signal will be output from the AUDIO terminal (Left).

[Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig 5-3-25, and perform adjustments at the power switch [VTR] or [PLAYER] position.

[Adjustment Procedure]

1) 1.5 MHz deviation adjustment
2) 1.7 MHz deviation adjustment
3) BPF adjustment


In Recording
Audio oscillator
600Ω
Attenuator
Main unit
VIDEO
L
R
AUDIO
Pattern generator
Video output (75Ω)
In Playback
Main unit
VIDEO
AUDIO L R
Audio level meter or distortion meter
47kΩ
TV monitor
When connecting AFM DEV jig.
Stabilized power supply (+7Vdc to +9Vdc)
+
-
TP27 (GND)
TP28(DC)
Oscilloscope
CH1
CH2
Ⓑ Ⓐ
INV↔SIN
S3
AFM DEV jig (J-6082-312-A)
TP33(GND)
TP32(R OUT 1)Ⓑ
TP31(L OUT 1)Ⓐ
TP30(R OUT 2)
TP29(L OUT 2)
S2
PAL↔NT
ST
S1
BIL
Red
White
J1(R)
J2(L)
J3
TP1(GND)
TP2(R OUT)Ⓑ
TP3(L OUT)Ⓐ
CN2
CN1
CN2 CN207
④ —— ③(RF SWP)
⑦ —— ⑤(REG GND)
⑥ —— ⑧(REC AFM)
To Audio terminal
White
L
Red
R
CN207
CPC
VC-190 board

600Ω : 270 (1-249-410-11) + 330 (1-249-411-11)

47kΩ : 1-249-437-11

47 kΩ : 1-249-437-11

Ⓐ: 1.5MHz deviation adjustment.
Ⓑ: 1.7MHz deviation adjustment.

Fig. 5-3-25.

1. 1.5 MHz Deviation Adjustment (VC-190 board)

Sets the spectrum of the L-ch (L+R/2 signal) level modulated during recording. If deviated, the crosstalk of the audio signal will occur and the audio level will drop during both playback and recording.

Mode	VTR recording
Signal	Input the AFM DEV jig output signal to the right and left audio input terminals (Note 1)
Measuring point	CH1: AFM DEV jig TP31 CH2: AFM DEV jig TP3
Measuring device	Oscilloscope ADD mode CH2 INV mode
Adjustment page	F
Adjustment address	52
Specified value	The difference between CH1 signal and CH2 signal should be minimum.

Connection:

1) Connect CN2 of the AFM DEV jig to CN207 of the VC-190 board.
2) Connect the audio output terminal (J1 and J2) of the AFM DEV jig to AUDIO terminal of the unit.
3) Connect TP28 (DC), TP27 (GND) of the AFM DEV jig to the DC power supply (+7 Vdc to +9 Vdc).
4) Set the AFM DEV jig switches to the following positions.
   S1 .... BIL position
   S2 .... NT position (NTSC)
   PAL position (PAL)
   S3 .... SIN position

Note : NTSC model : CCD-TRV62/TRV72/TRV82/TRV92
PAL model : CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjustment method:

1) Match the vertical ranges of CH1 and CH2 of the oscilloscope to each other.
2) Set the oscilloscope to the ADD mode and CH2 to the INV (inverse) mode.
3) Set data: 01 to page: 0, address: 01.
4) Change the data of page: F, address: 52 and minimize the audio signal level difference (A).
5) Press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

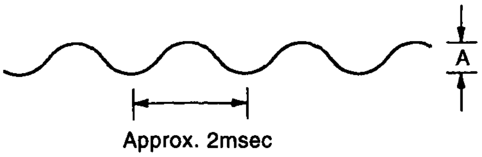


Fig. 5-3-26.

2. 1.7 MHz Deviation Adjustment (VC-190 board)

Sets the spectrum of the R-ch (L–R/2 signal) level modulated during recording. If deviated, the crosstalk of the audio signal will occur and the audio level will drop during both playback and recording.

Mode	VTR recording
Signal	Input the AFM DEV jig output signal to the right and left audio input terminals
Measuring point	CH1: AFM DEV jig TP32 CH2: AFM DEV jig TP2
Measuring device	Oscilloscope ADD mode CH2 INV mode
Adjustment page	F
Adjustment address	53
Specified value	The difference between CH1 signal and CH2 signal should be minimum.

Connection:

1) Connect CN2 of the AFM DEV jig to CN207 of the VC-190 board.
2) Connect the audio output terminal (J1 and J2) of the AFM DEV jig to AUDIO terminal of the unit.
3) Connect TP28 (DC), TP27 (GND) of the AFM DEV jig to the DC power supply (+7 to +9 Vdc).
4) Set the AFM DEV jig switches to the following positions.
   S1 .... BIL position
   S2 .... NT position (NTSC)
   PAL position (PAL)
   S3 .... INV position

Note : NTSC model : CCD-TRV62/TRV72/TRV82/TRV92
PAL model : CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjustment method:

1) Match the vertical ranges of CH1 and CH2 of the oscilloscope to each other.
2) Set the oscilloscope to the ADD mode and CH2 to the INV (inverse) mode.
3) Set data: 01 to page: 0, address: 01.
4) Change the data of page: F, address: 53 and minimize the audio signal level difference (A).
5) Press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

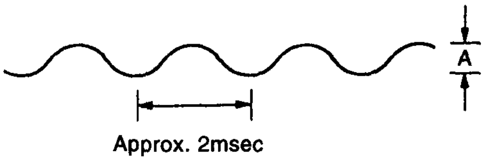


Fig. 5-3-27.

3. BPF f0 Adjustment (VC-190 board)

Sets the BPF passing frequency so that the AFM signal can separate from the playback RF signal properly. If deviated. the mono/stereo mode will be differentiated incorrectly, and noises and distortions will increase during high volume playback.

Mode	Playback
Signal Measuring point	Alignment tape: For BPF adjustment (WR5-11NS (NTSC)) (WR5-11CS (PAL))
Measuring device	Right or left audio output terminal
Adjustment page	Distortion meter
Adjustment address	F
	54
Specified value	The Main and Sub channel distortion rates should be almost the same (within ± 1%) and minimum

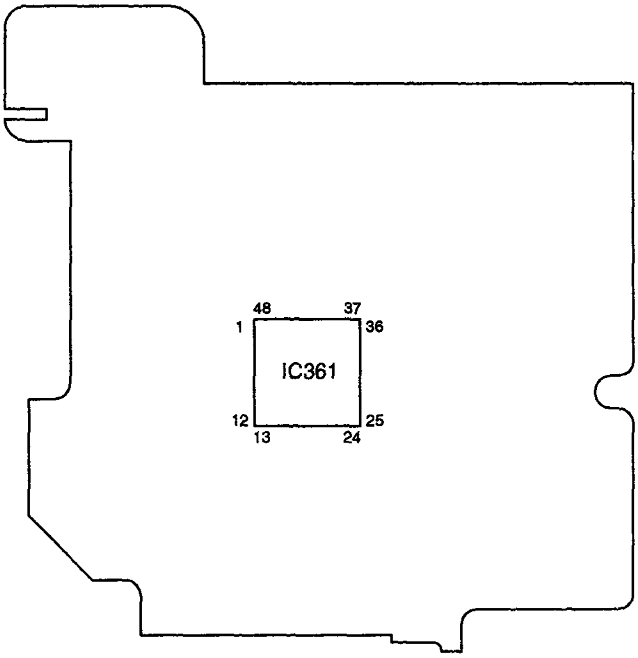
Note : NTSC model : CCD-TRV62/TRV72/TRV82/TRV92
PAL model : CCD-TRV54E/TRV56E/TRV64E/TRV94E

Adjustment method:

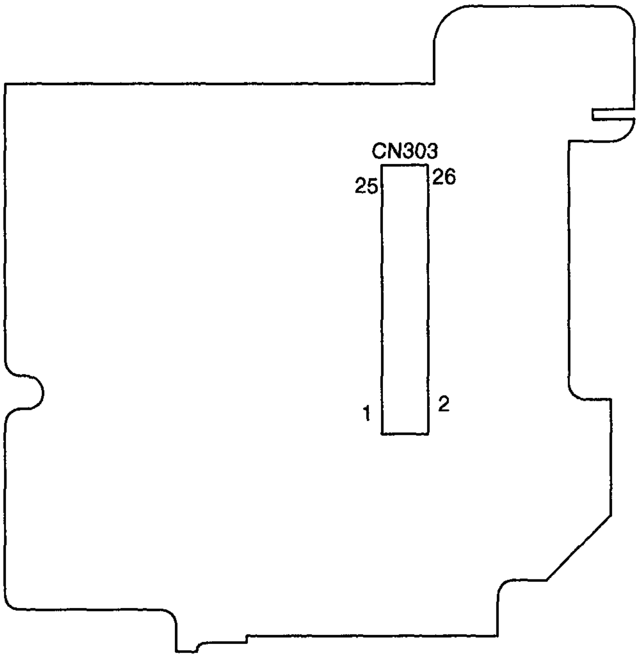
1) Set data: 01 to page: 0, address: 01.
2) Set the Hi-Fi sound switch (menu display) to " $\boxed{2}$ ".
3) Change the data of page: F, address: 54 and minimize the distortion rate.
4) Press the PAUSE button of the adjusting remote commander.
5) Set the Hi-Fi sound switch to " $\boxed{1}$ ".
6) Change the data of page: F, address: 54 and minimize the distortion rate.
7) Press the PAUSE button of the adjusting remote commander.
8) Repeat steps 2) to 7) and set the data of address: 54 so that the distortions rates when the Hi-Fi sound switch is set to " $\boxed{2}$ " and set to " $\boxed{1}$ " respectively are almost the same and minimum.
9) Press the PAUSE button of the adjusting remote commander.
10) Set data: 00 to page: 0, address: 01.
11) Set the Hi-Fi sound switch to "STEREO".

3-7. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

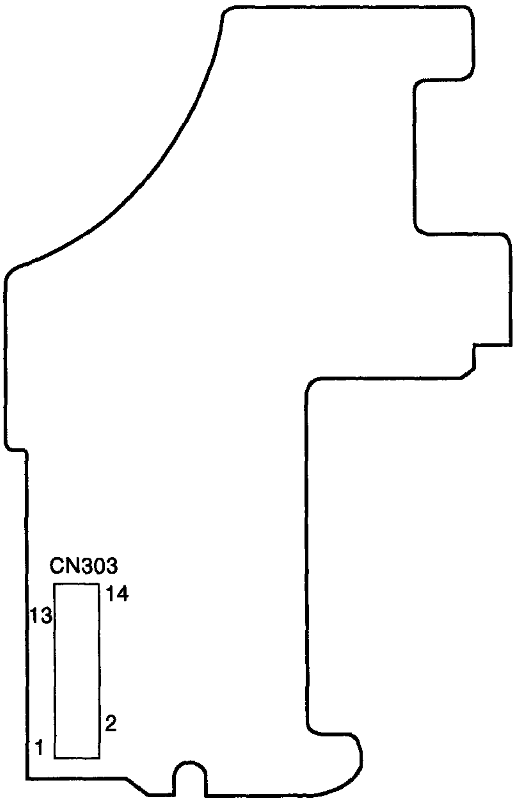
MI-27 BOARD (SIDE A)
(NTSC 4 INCH LCD MODEL)
MI-28 BOARD (SIDE A)
(NTSC 3.5/PAL 3.5/PAL 4 INCH LCD MODEL)


48
37
1
36
IC361
12
25
13
24

MI-27 BOARD (SIDE B)
(NTSC 4 INCH LCD MODEL)
MI-28 BOARD (SIDE B)
(NTSC 3.5/PAL 3.5/PAL 4 INCH LCD MODEL)

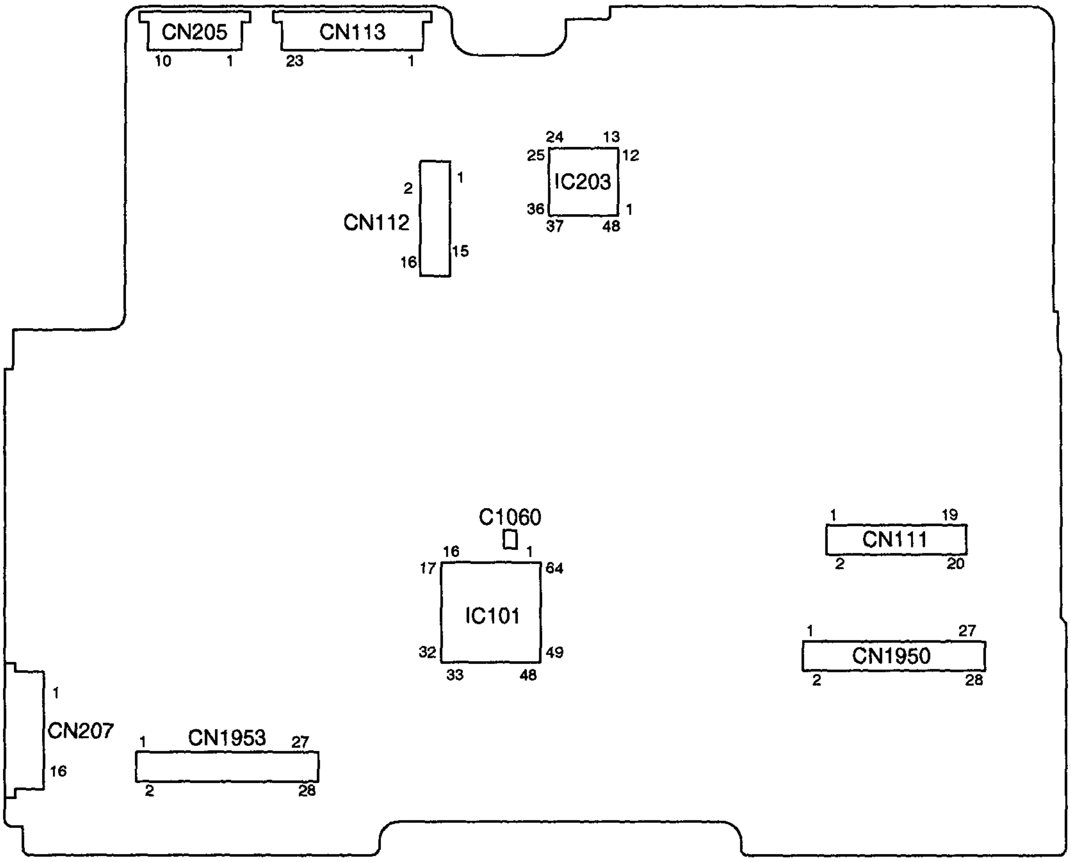

CN303
25
26
1
2

MA-298 BOARD (SIDE B) (2.5 INCH LCD MODEL)

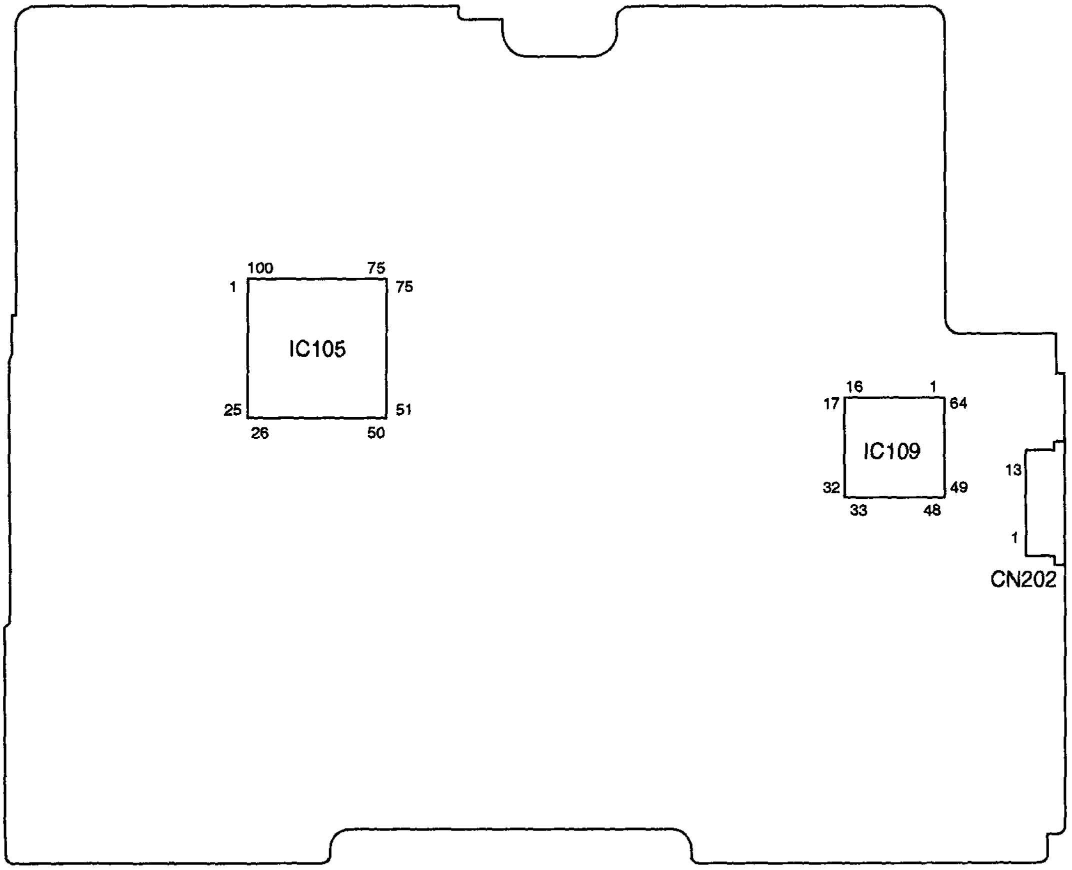

CN303
14
13
2
1

NTSC 4 INCH LCD MODEL: CCD-TRV82/TRV94
NTSC 3.5 INCH LCD MODEL: CCD-TRV62/TRV72
PAL 4 INCH LCD MODEL: CCD-TRV56E/TRV94E
PAL 3.5 INCH LCD MODEL: CCD-TRV54E
2.5 INCH LCD MODEL: CCD-TRV64E

VC-190 BOARD (SIDE A)


CN205
10
1
CN113
23
1
24
13
25
12
IC203
36
1
37
48
2
1
CN112
16
15
C1060
16
1
17
64
IC101
32
49
33
48
1
19
CN111
2
20
1
27
CN1950
2
28
1
CN207
16
1
CN1953
27
2
28

VC-190 BOARD (SIDE B)


100
75
1
75
IC105
25
51
26
50
16
1
17
64
IC109
32
49
33
48
13
1
CN202

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:

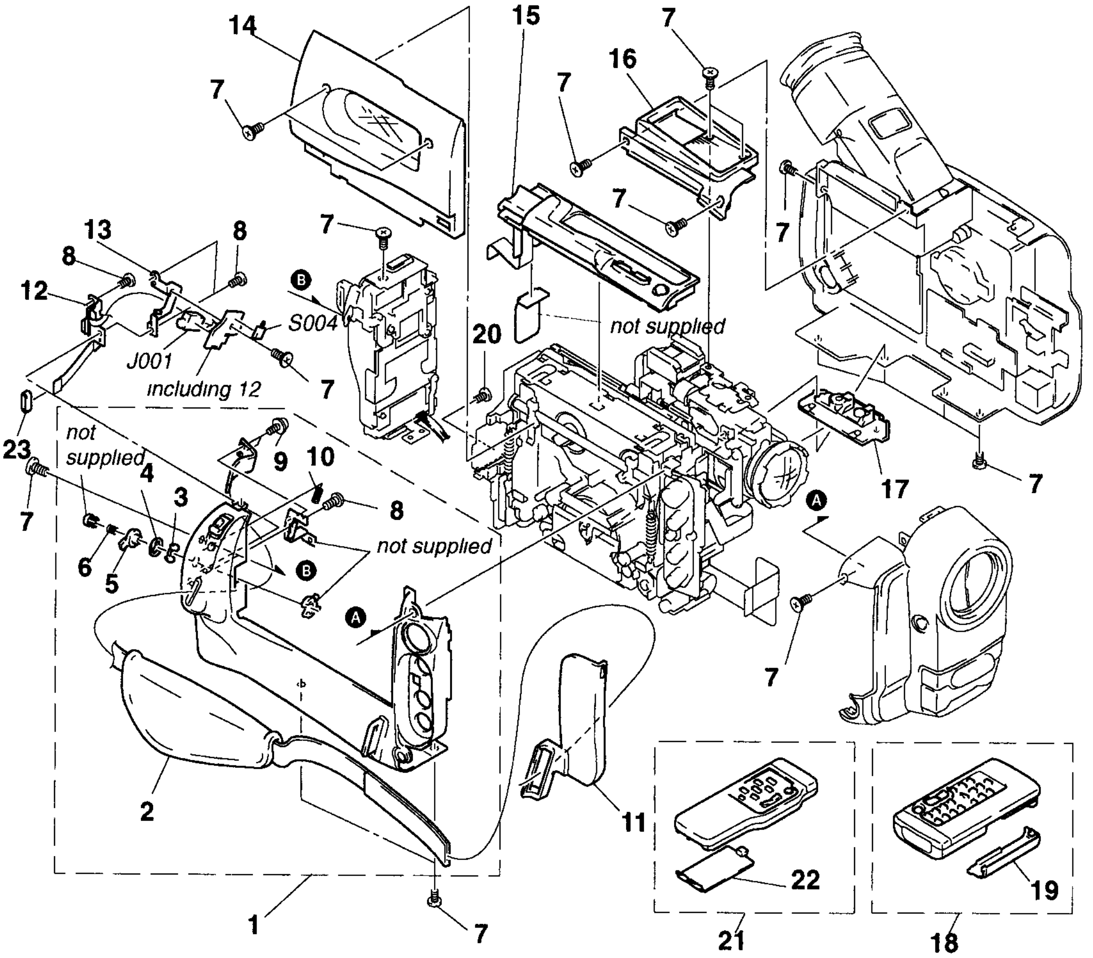
- Items marked "*" are not stocked since they are seldom required for routine service Some delay should be anticipated when ordering these items
- The mechanical parts with no reference number in the exploded views are not supplied

- Abbreviation
  Canadian model is abbreviated as CND.
  East European model is abbreviated as EE.
  Hong Kong model is abbreviated as HK.
  Australian model is abbreviated as AUS
  Tourist model is abbreviated as JE.
  Chinese model is abbreviated as CH
  North European model is abbreviated as NE
  Russian model is abbreviated as RU

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety
Replace only with part number specified

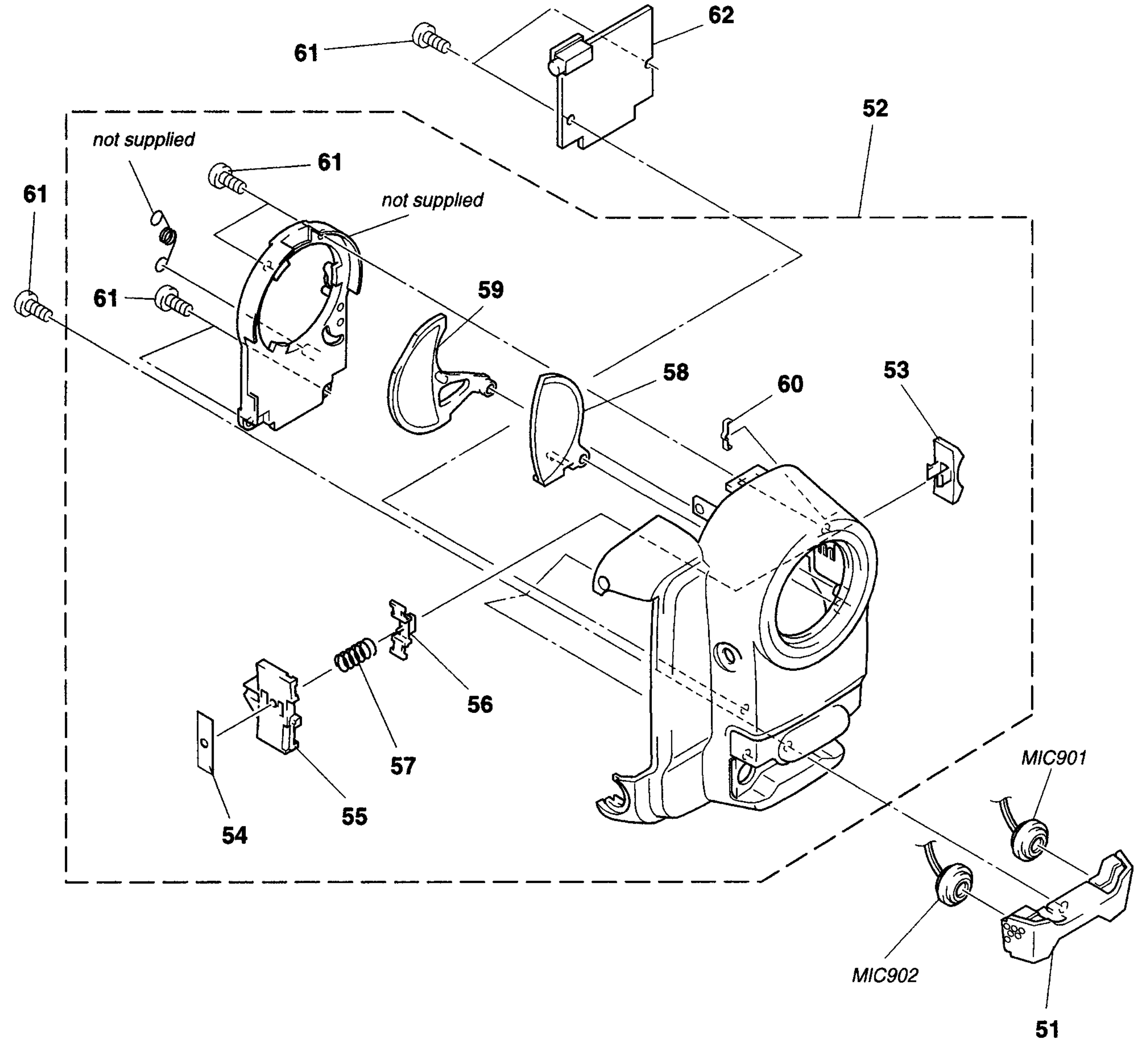
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité
Ne les remplacer que par une pièce portant le numéro spécifié

6-1-1. CABINET (L) BLOCK ASSEMBLY (EXCEPT TRV64E)



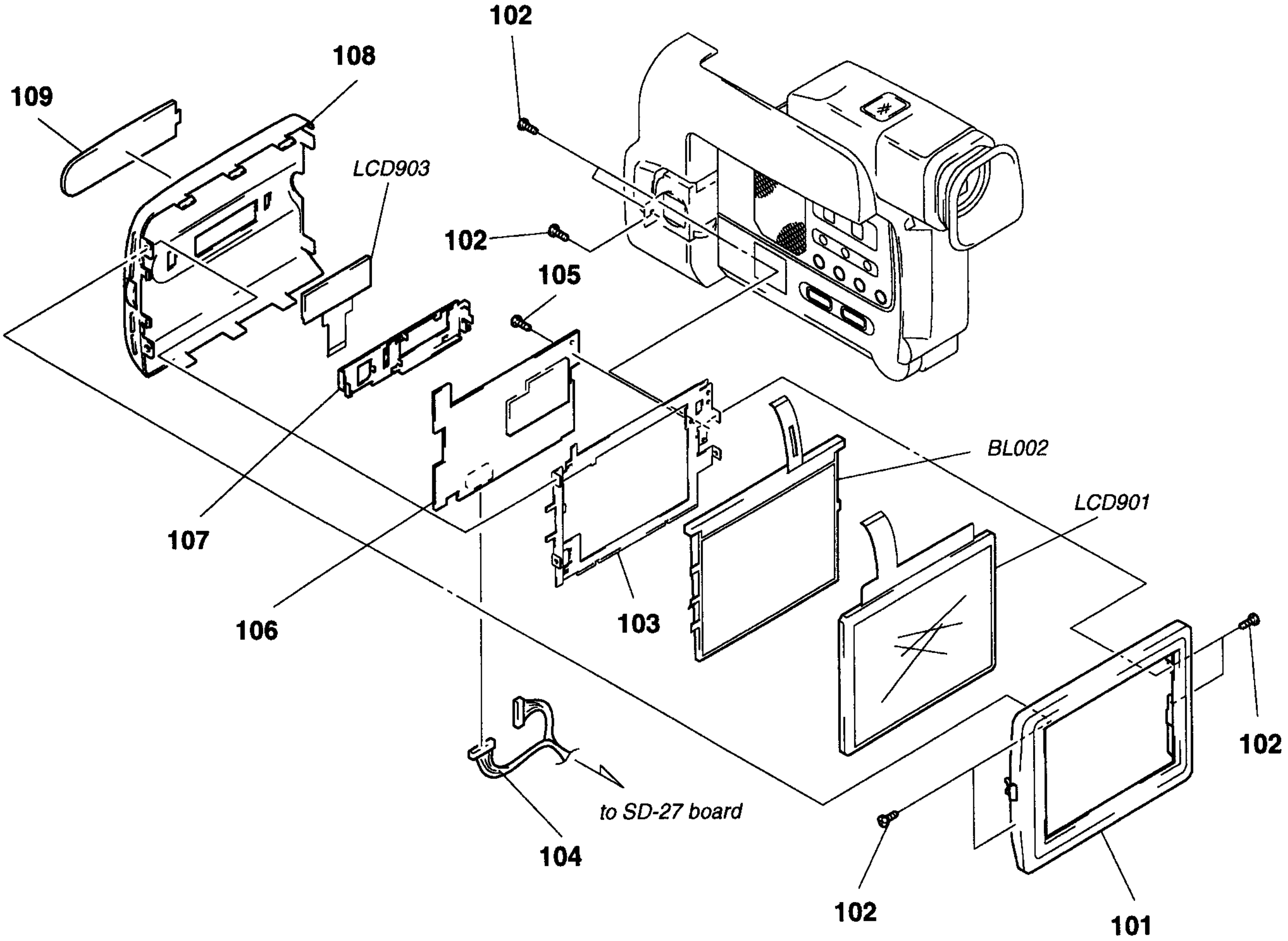
Ref No	Part No	Description	Remark
1	X-3947-247-1	CABINET (L) ASSY (TRV62/TRV72/TRV82)	
1	X-3947-291-1	CABINET (L) ASSY (TRV94E AEP,UK)	
1	X-3947-370-1	CABINET (L) ASSY (TRV56E)	
1	X-3947-433-1	CABINET (L) ASSY (TRV94)	
1	X-3947-248-1	CABINET(L) ASSY (TRV54E/TRV94E E,HK,JE)	
2	3-969-339-31	BELT, GRIP	
* 3	3-975-506-01	SHEET METAL, SS (TRV54E/TRV94/TRV94E)	
4	3-970-854-01	SPRING, STAND-BY	
5	3-969-081-01	KNOB, STAND-BY	
6	3-972-501-01	SPRING, COMPRESSION	
7	3-968-729-01	SCREW (M2), LOCK ACE, P2	
8	3-948-339-61	TAPPING	
9	3-679-362-11	SCREW	
10	3-302-492-00	SPRING, COMPRESSION	
11	3-975-522-01	COVER, JACK	
12	1-475-098-11	SWITCH BLOCK, CONTROL(SS-8100) (TRV54E/TRV94/TRV94E)	
12	1-475-098-21	SWITCH BLOCK, CONTROL(SS-8100) (EXCEPT TRV54E/TRV94/TRV94E)	
* 13	3-975-532-01	HOLDER, EL	
14	X-3947-199-1	LID ASSY, CASSETTE(EXCEPT TRV54E/TRV56E)	
14	X-3947-249-1	LID ASSY(NORMAL), CASSETTE (TRV54E/TRV56E)	
15	1-475-099-31	SWITCH BLOCK, VTR CONTROL (FK) (TRV62/TRV72/TRV82)	
15	1-475-099-41	SWITCH BLOCK, VTR CONTROL (FK) (TRV54E/TRV56E/TRV94/TRV94E E,HK,JE)	
15	1-475-099-51	SWITCH BLOCK, VTR CONTROL (FK) (TRV94E AEP,UK)	
16	3-975-525-01	BASE, SHOE	
17	3-975-516-01	SCREW, TRIPOD	
18	8-917-593-90	COMMANDER, REMOTE (RMT-717) (TRV94/TRV94E)	
19	3-742-854-01	LID, BATTERY CASE (for RMT-717) (TRV94/TRV94E)	
20	3-713-786-21	SCREW (M2X3)	
21	1-467-574-21	REMOTE COMMANDER (RMT-708) (EXCEPT TRV94/TRV94E)	
22	3-958-131-01	LID, BATTERY CASE (for RMT-708) (EXCEPT TRV94/TRV94E)	
23	1-500-227-11	BEAD, FERRITE (TRV94E AEP,UK)	
J001	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)	
S004	1-572-688-11	SWITCH, PUSH (1 KEY)(EJECT)	

6-1-2. FRONT PANEL BLOCK ASSEMBLY (EXCEPT TRV64E)



Ref No	Part No	Description	Remark
51	X-3947-196-1	CABINET ASSY, MICROPHONE	
52	X-3947-246-1	PANEL (831) ASSY, FRONT (TRV94E·AEP,UK)	
52	X-3947-253-1	PANEL (816) ASSY, FRONT	(TRV62/TRV72/TRV82)
52	X-3947-534-1	PANEL (831) ASSY, FRONT	(TRV54E/TRV56E/TRV94/TRV94E.E,HK,JE)
53	3-975-476-01	KNOB (832), POWER	
* 54	3-975-601-01	SHEET, TH	
* 55	3-975-477-01	RETAINER, POWER	
56	3-975-478-01	LOCK, POWER	
57	3-973-619-01	SPRING, COMPRESSION	
58	3-969-054-01	COVER (1), L	
59	3-969-055-01	COVER (2), L	
* 60	3-975-479-01	SPRING, CLICK	
61	3-948-339-11	SCREW, TAPPING	
62	A-7073-093-A	MI-27 (VHCRJ) BOARD, COMPLETE (TRV82)	
62	A-7073-118-A	MI-28 (VHCRP) BOARD, COMPLETE	(TRV54E/TRV56E/TRV94E)
62	A-7073-237-A	MI-27 (VHCR) BOARD, COMPLETE (TRV94)	
62	A-7073-225-A	MI-28 (VH35) BOARD, COMPLETE	(TRV62/TRV72)
MIC901	1-542-312-11	MICROPHONE (L-CH)	
MIC902	1-542-312-11	MICROPHONE (R-CH)	

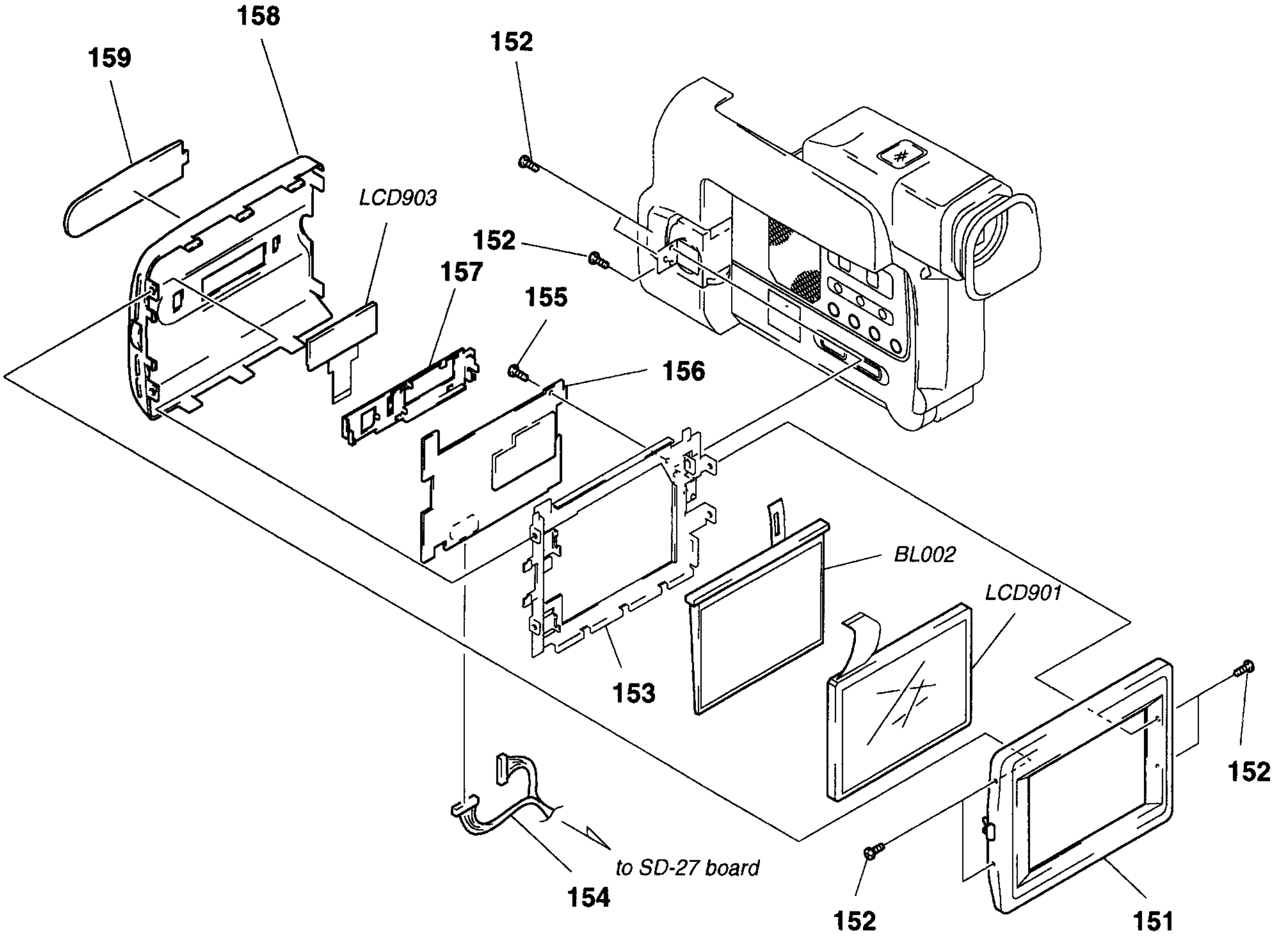
6-1-3. 4 INCH LCD BLOCK ASSEMBLY (TRV56E/TRV82/TRV94/TRV94E)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié

Ref. No	Part No	Description	Remark
101	X-3947-189-1	CABINET (M) ASSY, P	
102	3-968-729-01	SCREW (M2), LOCK ACE, P2	
* 103	X-3947-190-1	FRAME ASSY, PANEL	
104	1-957-148-11	HARNESS (PD-105)	
105	3-713-786-21	SCREW (M2X3)	
106	A-7093-191-A	PD-80 (C4RP) BOARD, COMPLETE (TRV94E·AEP,UK)	
106	A-7093-221-A	PD-80 (C4RPE) BOARD, COMPLETE (TRV94E·E,HK,JE)	
106	A-7093-185-A	PD-78 (S4R) BOARD, COMPLETE (TRV94)	
106	A-7093-236-A	PD-78 (S4) BOARD, COMPLETE (TRV82)	
106	A-7093-219-A	PD-80 (C4PE) BOARD, COMPLETE (TRV56E)	
* 107	3-975-527-01	HOLDER, LCD	
108	X-3947-215-1	CABINET (C) ASSY, P	
109	3-975-526-11	WINDOW (832), LCD (TRV94E)	
109	3-975-526-21	WINDOW (832), LCD (TRV82)	
109	3-975-526-51	WINDOW (832), LCD (TRV94)	
109	3-975-526-71	WINDOW (832), LCD (TRV56E)	
⚠BL002	1-517-656-21	TUBE, FLUORESCENT COLD CATHODE (BACK LIGHT)	
LCD901	1-801-664-11	INDICATOR MODULE, LIQUID CRYSTAL (TRV56E/TRV94/TRV94E)	
LCD901	1-801-665-21	INDICATOR MODULE, LIQUID CRYSTAL (TRV82)	
LCD903	1-801-697-11	DISPLAY PANEL, LIQUID CRYSTAL	

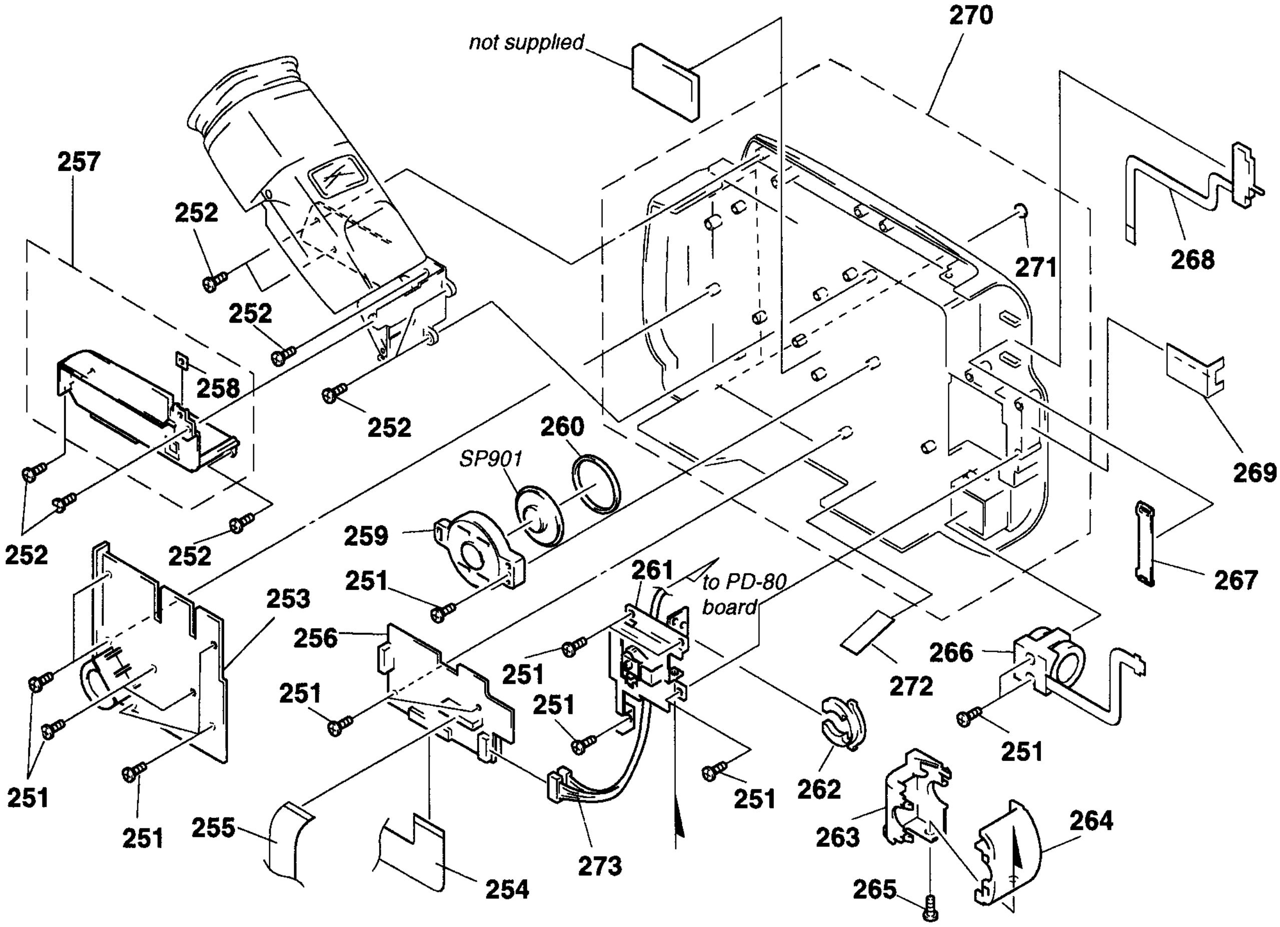
6-1-4. 3.5 INCH LCD BLOCK ASSEMBLY (TRV54E/TRV62/TRV72)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité Ne les remplacer que par une piéce portant le numéro spécifié

Ref No.	Part No	Description	Remark
151	X-3947-214-1	CABINET(M) ASSY, P	
152	3-968-729-01	SCREW (M2), LOCK ACE, P2	
153	X-3947-251-1	FRAME ASSY, PANEL	
154	1-957-148-11	HARNESS (PD-105)	
155	3-713-786-21	SCREW (M2X3)	
156	A-7093-210-A	PD-80 (C35PE) BOARD, COMPLETE (TRV54E)	
156	A-7093-212-A	PD-80 (C35) BOARD, COMPLETE (TRV62/TRV72)	
* 157	3-975-527-01	HOLDER, LCD	
158	X-3947-215-1	CABINET (C) ASSY, P	
159	3-975-526-31	WINDOW (832), LCD (TRV72)	
159	3-975-526-41	WINDOW (832), LCD (TRV62)	
159	3-975-526-61	WINDOW (832), LCD (TRV54E)	
⚠BL002	1-517-655-11	TUBE, FLUORESCENT COLD CATHODE (BACK LIGHT)	
LCD901	1-801-667-11	INDICATOR MODULE, LIQUID CRYSTAL	
LCD903	1-801-697-11	DISPLAY PANEL, LIQUID CRYSTAL	

6-1-5. CABINET (R) BLOCK ASSEMBLY (EXCEPT TRV64E)


270
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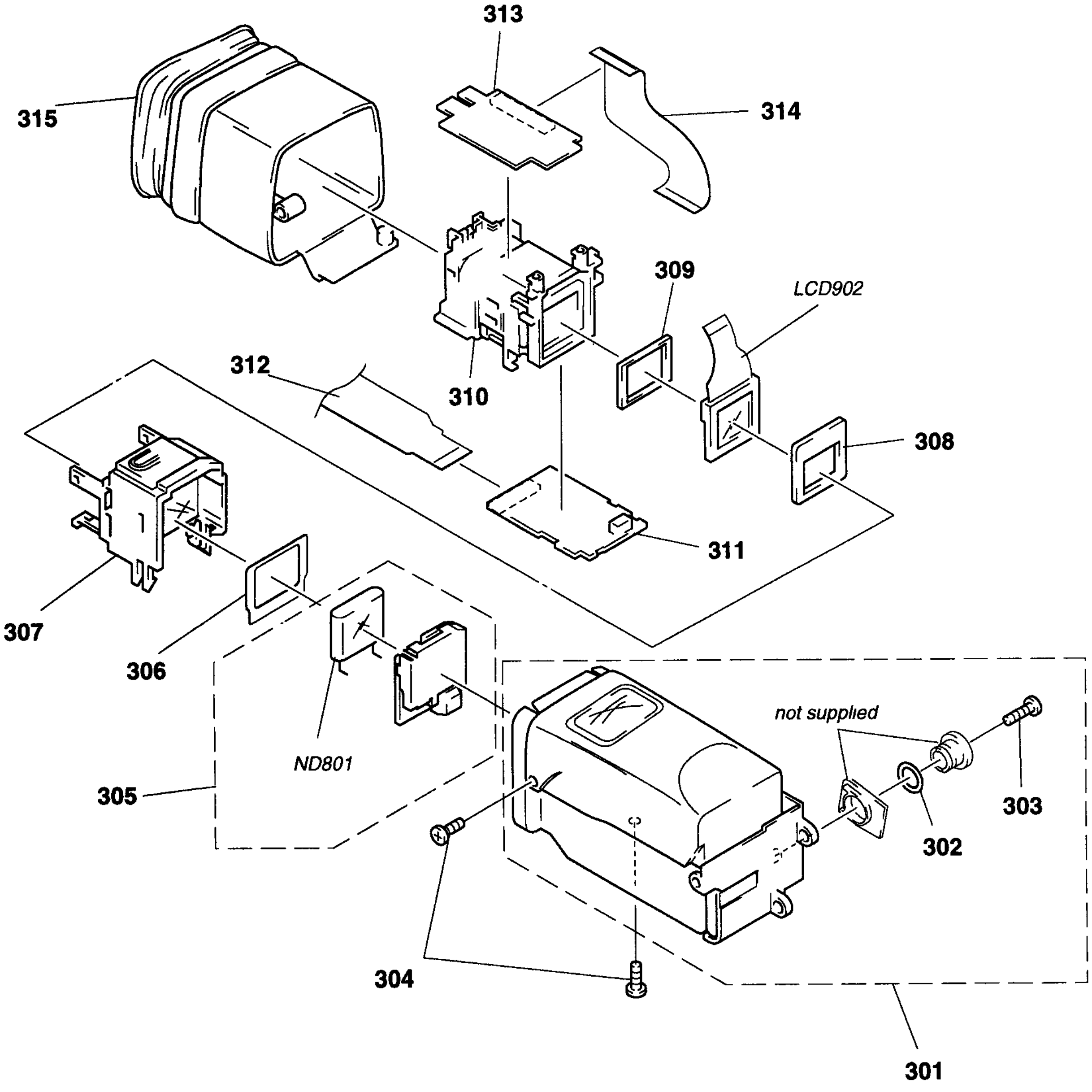
257
252
252
271
268
258
252
260
SP901
269
259
252
252
252
251
261
to PD-80 board
267
253
256
266
251
272
251
251
251
262
251
251
251
263
264
255
251
273
265
254

Ref No.	Part No	Description	Remark
251	3-948-339-61	TAPPING	
252	3-948-339-01	SCREW, TAPPING	
253	1-475-100-11	SWITCH BLOCK, CONTROL (SD-4)	
254	1-665-144-11	FP-503 FLEXIBLE BOARD	
255	1-665-143-11	FP-502 FLEXIBLE BOARD	
256	A-7073-097-A	SD-27 BOARD, COMPLETE	
257	X-3947-191-1	RETAINER ASSY, VF BASE	
258	3-718-233-01	NUT, PLATE	
* 259	X-3947-195-1	RETAINER ASSY, SPEAKER	
260	3-965-367-01	SPACER, SP	
261	X-3947-490-1	HINGE ASSY	
* 262	3-975-528-01	HOLDER, TILT	
263	3-975-529-01	COVER (C), HINGE	
264	3-969-164-01	COVER (M), HINGE	
265	3-968-729-01	SCREW (M2), LOCK ACE, P2	

Ref No	Part No	Description	Remark
266	1-475-068-21	SWITCH BLOCK, CONTROL(MF-7800)	
* 267	3-975-523-01	COVER, SWITCH	
268	1-473-602-21	SWITCH BLOCK, CONTROL(PS-6500)	
269	3-976-820-01	SHEET, HINGE COVER	
270	X-3947-252-1	CABINET (R (816)) ASSY (TRV62/TRV72/TRV82)	
270	X-3947-476-1	CABINET (R (830)) ASSY (TRV54E)	
270	X-3947-535-1	CABINET (R (831)) ASSY (TRV94/TRV94E E,HK,JE)	
270	X-3947-244-1	CABINET (R (831)) ASSY (TRV94E AEP,UK)	
270	X-3947-536-1	CABINET (R (817)) ASSY (TRV56E)	
271	3-959-978-02	CUSHION, PANEL	
272	2-532-810-00	CUSHION, 15X5X0 3	
273	1-957-148-11	HARNESS (PD-105)	
SP901	1-504-753-21	SPEAKER (2 8CM)	

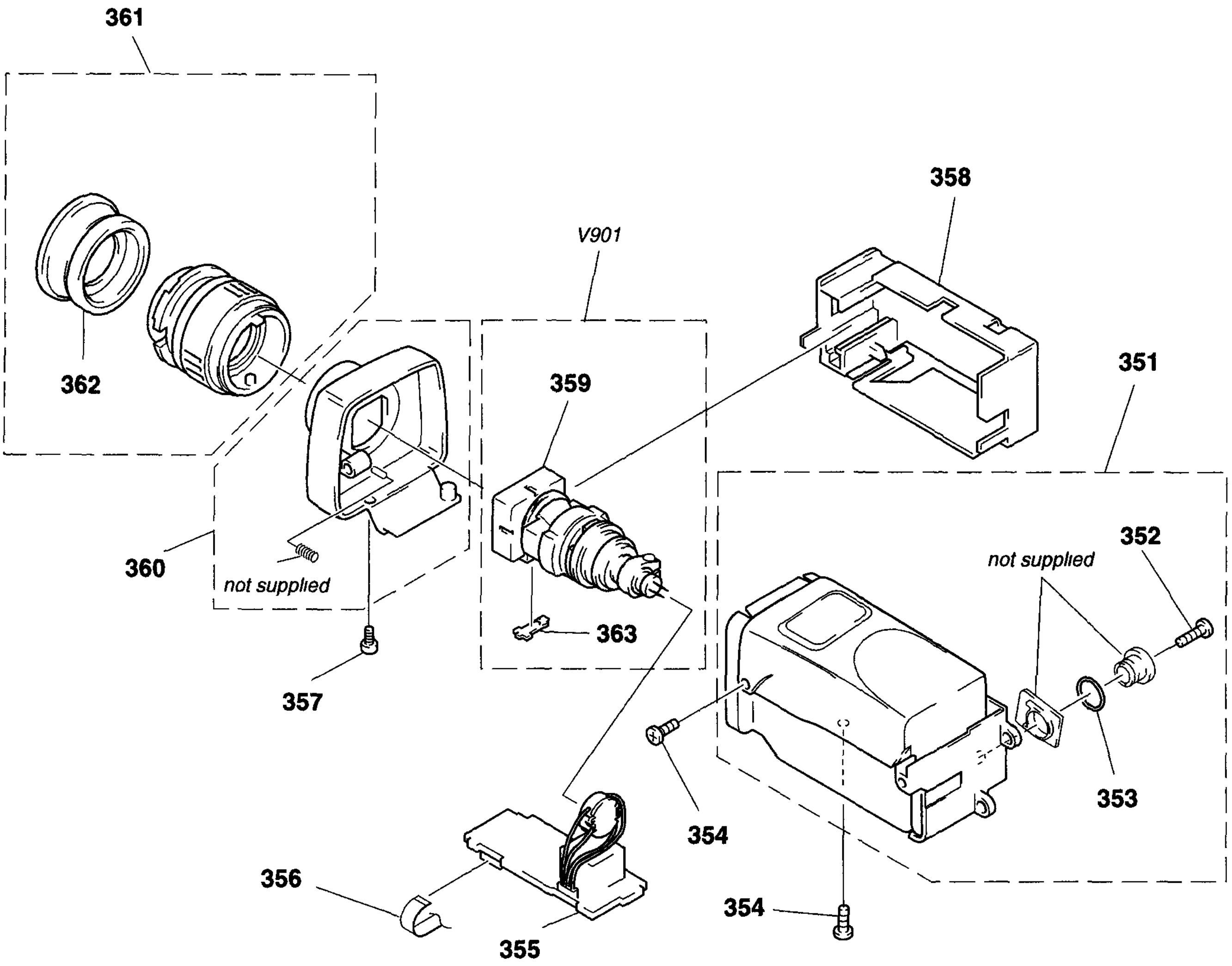
6-1-6. EVF BLOCK ASSEMBLY (COLOR EVF) (TRV72/TRV82/TRV94/TRV94E)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety Replace only with part number specified.	Les composants identifiés, par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref No.	Part No.	Description	Remark
301	X-3947-186-1	CABINET ASSY (C), EVF FRONT	
302	3-976-791-01	O RING (6.5X3 9X1.3)	
303	3-948-339-11	SCREW, TAPPING	
304	3-948-339-01	SCREW, TAPPING	
305	A-7073-096-A	LB-50 BOARD, COMPLETE	
* 306	3-969-923-01	CUSHION, BACK LIGHT	
307	X-3946-709-2	HOLDER ASSY (BLACK), PRISM	
* 308	3-960-302-11	CUSHION (1), LCD	
* 309	3-969-924-01	CUSHION (Y), LCD	
310	X-3947-193-1	LENS ASSY, VF	
311	A-7073-094-A	VF-111 BOARD, COMPLETE (TRV72/TRV82/TRV94)	
311	A-7073-119-A	VF-111P BOARD, COMPLETE (TRV94E)	
312	1-660-285-11	FP-386 FLEXIBLE BOARD	
313	A-7073-095-A	VF-112 BOARD, COMPLETE (TRV72/TRV82/TRV94)	
313	A-7073-120-A	VF-112P BOARD, COMPLETE (TRV94E)	
314	1-665-149-11	FP-530 FLEXIBLE BOARD	
315	X-3947-192-1	CABINET (C) ASSY, EVF REAR (TRV72/TRV82/TRV94)	
315	X-3947-245-1	CABINET (C) ASSY, EVF REAR (TRV94E)	
LCD902	8-753-016-10	LCX005BK-1/5	
⚠ND801	1-517-414-21	FLUORESCENT TUBE (0 55 INCH)	

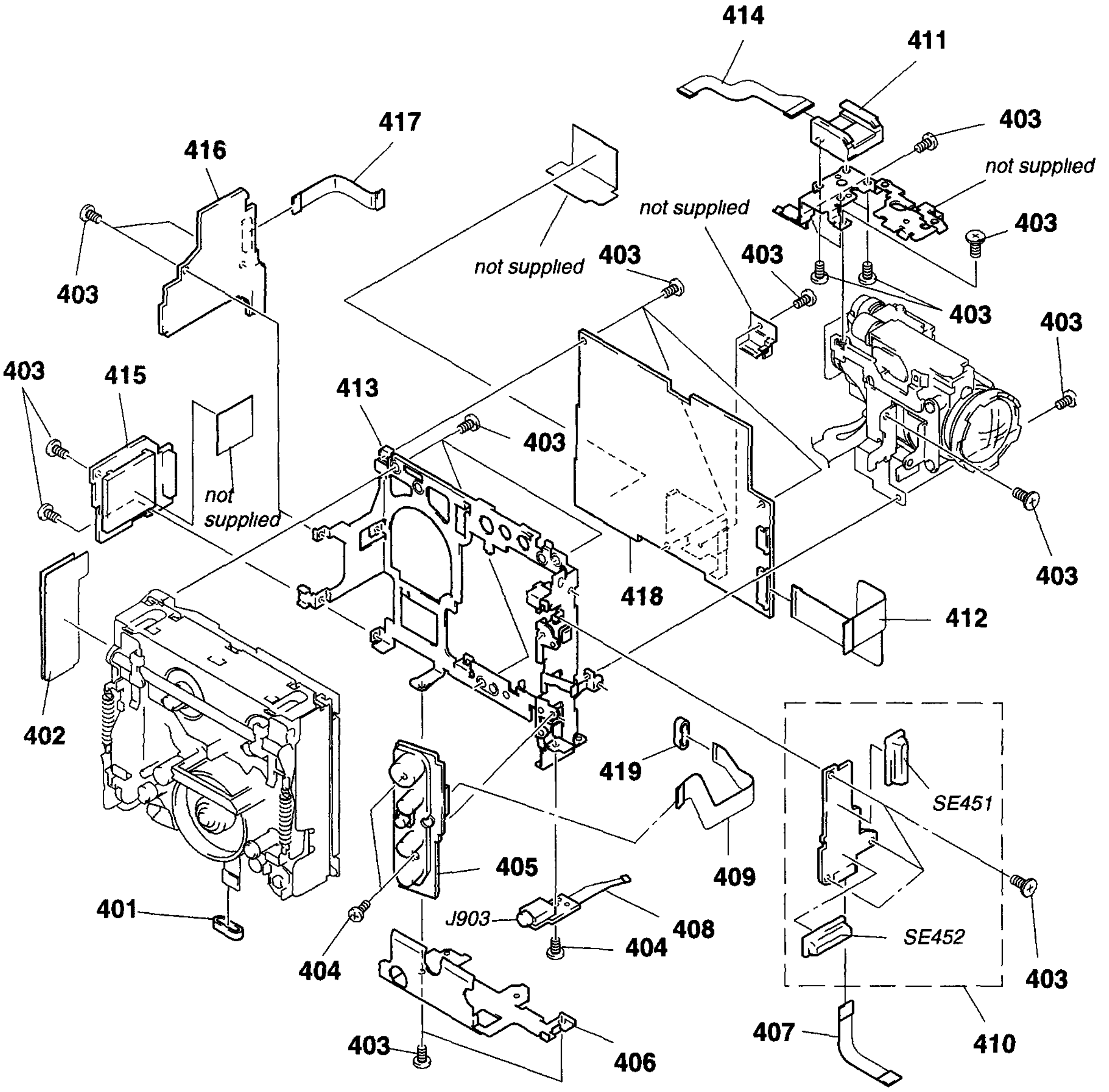
6-1-7. EVF BLOCK ASSEMBLY (B/W EVF) (TRV54E/TRV56E/TRV62)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité Ne les remplacer que par une pièce portant le numéro spécifié.

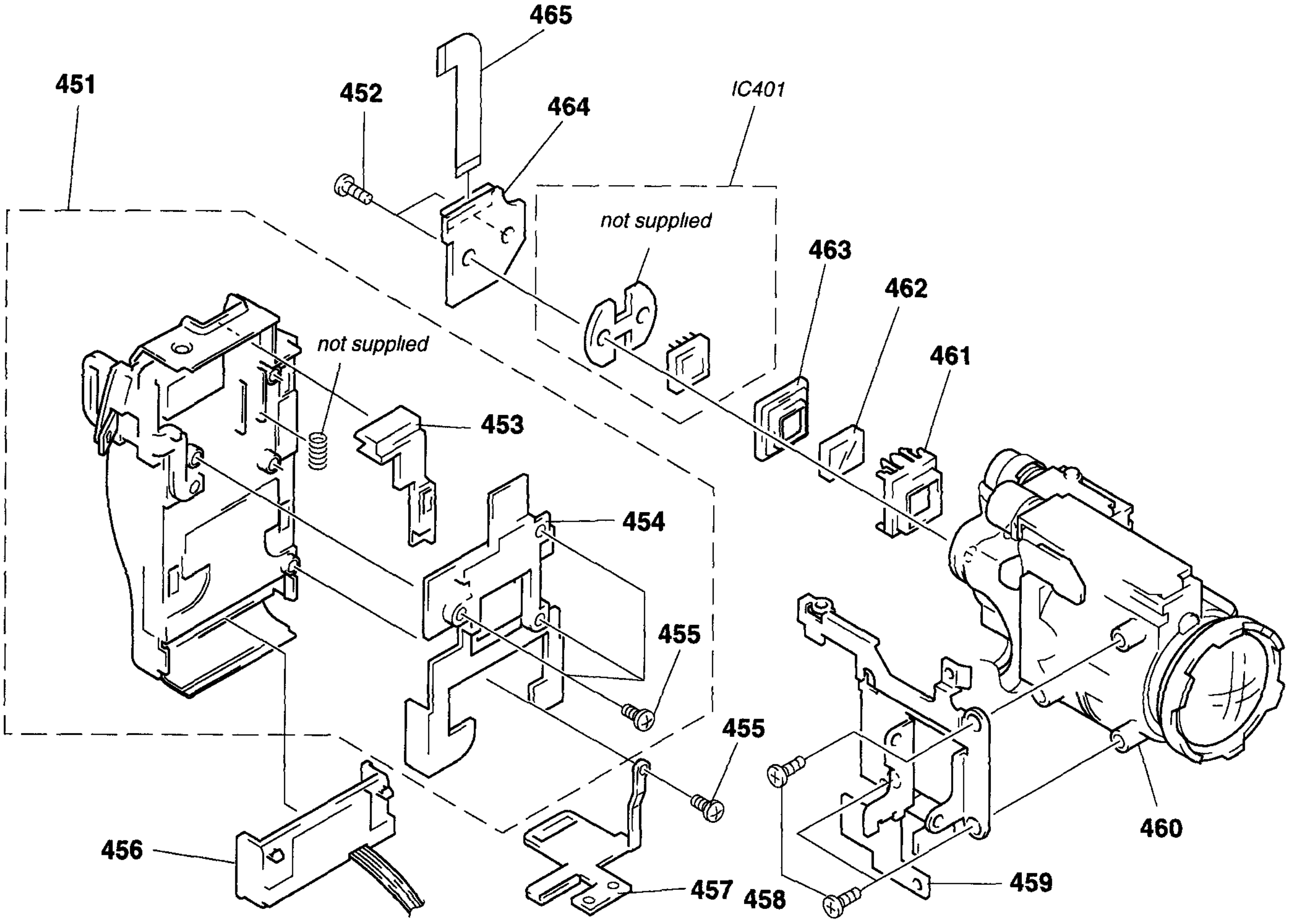
Ref. No	Part No	Description	Remark
351	X-3947-250-1	CABINET ASSY (B/W), EVF FRONT	
352	3-948-339-11	SCREW, TAPPING	
353	3-976-791-01	O RING (6.5X3.9X1.3)	
354	3-948-339-01	SCREW, TAPPING	
355	A-7056-774-A	VF-99 (HP) BOARD, COMPLETE	(TRV54E/TRV56E)
355	A-7066-792-A	VF-99 (VHL4) BOARD, COMPLETE (TRV62)	
356	1-660-303-11	FP-395 FLEXIBLE BOARD	
357	3-975-898-01	SCREW (T), F LOCK	
358	X-3947-217-2	RETAINER ASSY, CRT	
359	3-709-273-01	CRT MASK	
360	X-3947-216-1	CABINET (B/W) ASSY, EVF REAR	
361	X-3944-966-1	FINDER ASSY (TRV54E/TRV56E/TRV62)	
362	3-963-391-01	EYE CUP	
363	3-709-272-01	COVER, HIGH VOLTAGE	
⚠V901	1-452-673-31	CRT ASSY (M01KXX90WB)	

6-1-8. MAIN BOARDS ASSEMBLY (EXCEPT TRV64E)



Ref No	Part No	Description	Remark
401	1-500-227-11	BEAD, FERRITE	(TRV94/TRV94E)
402	3-975-520-01	SHEET, LS FLEXIBLE GUARD	
403	3-713-786-21	SCREW (M2X3)	
404	3-968-729-01	SCREW (M2), LOCK ACE, P2	
405	A-7073-101-A	PJ-80 (VHCRJ) BOARD, COMPLETE	(TRV94/TRV94E E,HK,JE)
405	A-7073-121-A	PJ-80 (VHCRP) BOARD, COMPLETE	(TRV94E.AEP,UK)
405	A-7073-176-A	PJ-80 (HCI) BOARD, COMPLETE	(TRV62/TRV72/TRV82)
405	A-7073-231-A	PJ-80 (VM35PE) BOARD, COMPLETE	(TRV54E/TRV56E)
* 406	3-975-534-01	FRAME (B), MD	
407	1-660-277-11	FP-377 FLEXIBLE BOARD	
408	1-665-148-11	FP-527 FLEXIBLE BOARD	
409	1-665-146-11	FP-516 FLEXIBLE BOARD	
410	A-7073-099-A	SE-61 (VHCRJ) BOARD, COMPLETE	
411	1-774-867-21	CONNECTOR, EXTERNAL (HOT SHOE) 8P	
412	1-665-145-11	FP-512 FLEXIBLE BOARD	
413	3-975-515-01	FRAME, MD	
414	1-660-280-11	FP-380 FLEXIBLE BOARD	
415	A-7093-186-A	DD-95 (VHCRJ) BOARD, COMPLETE (TRV94)	
415	A-7093-192-A	DD-95 (VHCRP) BOARD, COMPLETE (TRV94E)	
415	A-7093-197-A	DD-95 (VH25PE) BOARD, COMPLEE	(TRV54E/TRV56E)
415	A-7093-235-A	DD-95 (VHCI) BOARD, COMPLETE	(TRV62/TRV72/TRV82)
416	A-7073-098-A	MM-35 (VHCRJ) BOARD, COMPLETE	(TRV94/TRV94E)
416	A-7073-174-A	MM-35 (HCI) BOARD, COMPLETE	(EXCEPT TRV54E/TRV94/TRV94E)
416	A-7073-230-A	MM-35 (VMR35PE) BOARD, COMPLETE	(TRV54E)
417	1-665-142-11	FP-500 FLEXIBLE BOARD	
418	A-7093-218-A	VC-190(VM35P) BOARD, COMPLETE (TRV56E)	
418	A-7093-222-A	VC-190 (VHCRE) BOARD, COMPLETE (TRV94)	
418	A-7093-190-A	VC-190 (VHCRP) BOARD, COMPLETE	(TRV94E AEP,UK)
418	A-7093-209-A	VC-190 (VMR35PE) BOARD, COMPLETE	(TRV54E)
418	A-7093-213-A	VC-190 (VHC35) BOARD, COMPLETE (TRV72)	
418	A-7093-220-A	VC-190 (VHCRE) BOARD, COMPLETE	(TRV94E E,HK,JE)
418	A-7093-234-A	VC-190 (VHCI) BOARD, COMPLETE (TRV82)	
418	A-7093-248-A	VC-190 (VH35) BOARD, COMPLETE (TRV62)	
419	1-500-226-31	BEAD, FERRITE	(TRV62/TRV72/TRV82/TRV94E AEP,UK)
J903	1-695-514-21	JACK (SMALL TYPE) 1P (HEADPHONES)	
SE451	1-810-889-71	SENSOR, ANGULAR VELOCITY (YAW)	
SE452	1-810-889-81	SENSOR, ANGULAR VELOCITY (PITCH)	

6-1-9. BATTERY PANEL ASSEMBLY AND CCD BLOCK ASSEMBLY (EXCEPT TRV64E)

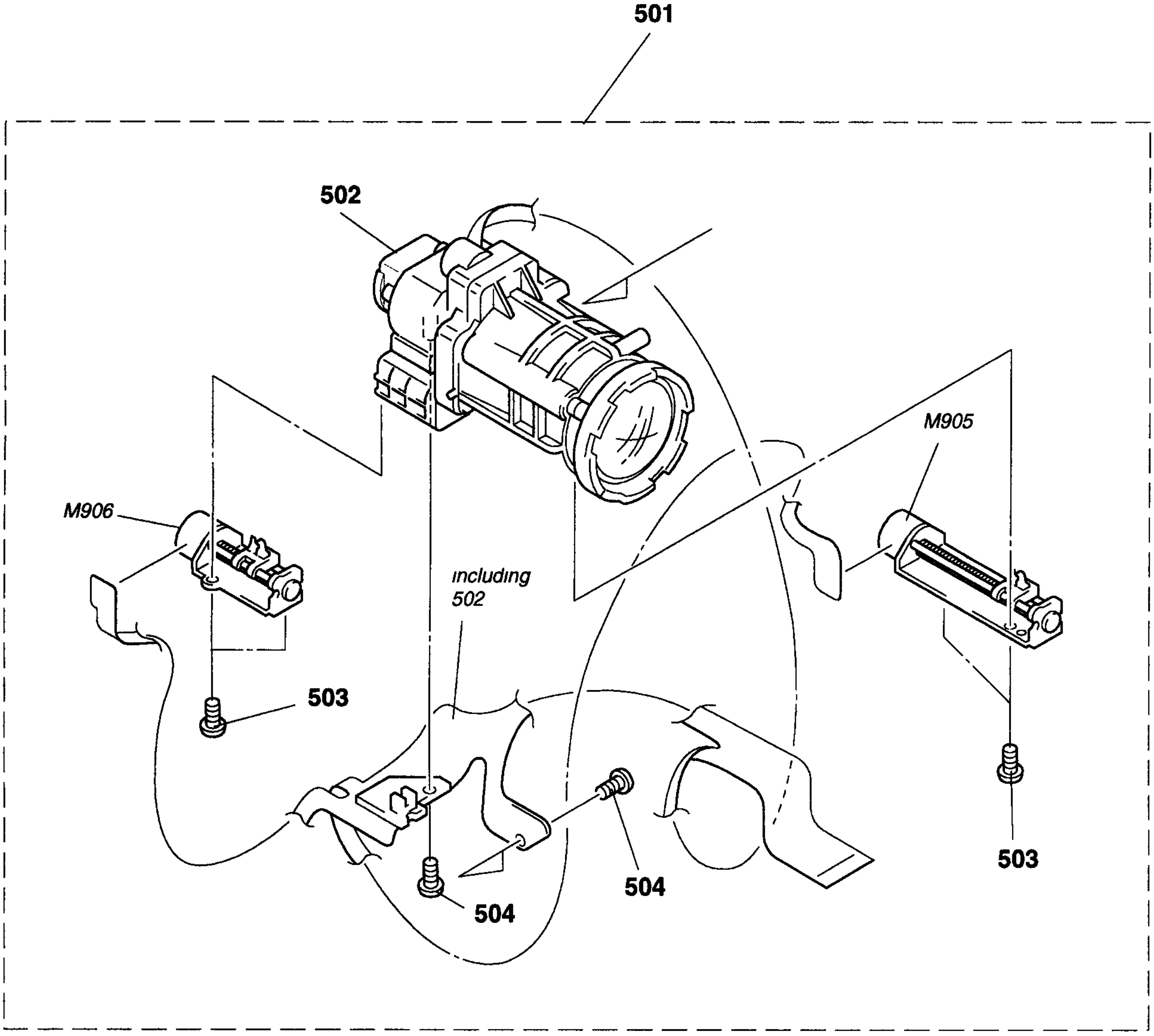


Be sure to read "Note on the CCD Imager replacement" on page 4–10 when changing the CCD imager.

Ref No.	Part No	Description	Remark
451	X-3947-254-1	PANEL (831) ASSY, BATTERY	
452	3-318-203-11	SCREW (B1.7X6), TAPPING	
453	3-975-500-11	KNOB, RELEASE	
* 454	3-975-501-01	COVER, LOCK	
455	3-713-791-51	SCREW (M1 7X3 5), TAPPING, P2	
456	1-694-076-21	TERMINAL BOARD, BATTERY	
* 457	3-975-524-01	SHEET METAL (LOWER), STRAP	
458	3-948-339-61	TAPPING	
459	3-975-517-01	FRAME (832), LENS	
460	8-848-710-01	LENS, ZOOM (VCL-4214VA)	

Ref No	Part No	Description	Remark
461	3-963-467-11	ADAPTOR (FH), CCD FITTING	
462	1-547-787-41	FILTER BLOCK, OPTICAL	
463	3-961-192-01	RUBBER (FH), SEAL	
464	A-7073-100-A	CD-166 BOARD, COMPLETE	
465	1-665-147-11	FP-523 FLEXIBLE BOARD	
IC401	A-7030-615-A	CCD BLOCK ASSY (079 SERVICE) (CCD IMAGER)(TRV62/TRV72/TRV82/TRV94)	
IC401	A-7030-782-A	CCD BLOCK ASSY (211 SERVICE) (CCD IMAGER)(TRV54E/TRV56E/TRV94E)	

6-1-10. LENS DEVICE (VCL-4214VA)


501
502
M905
M906
including
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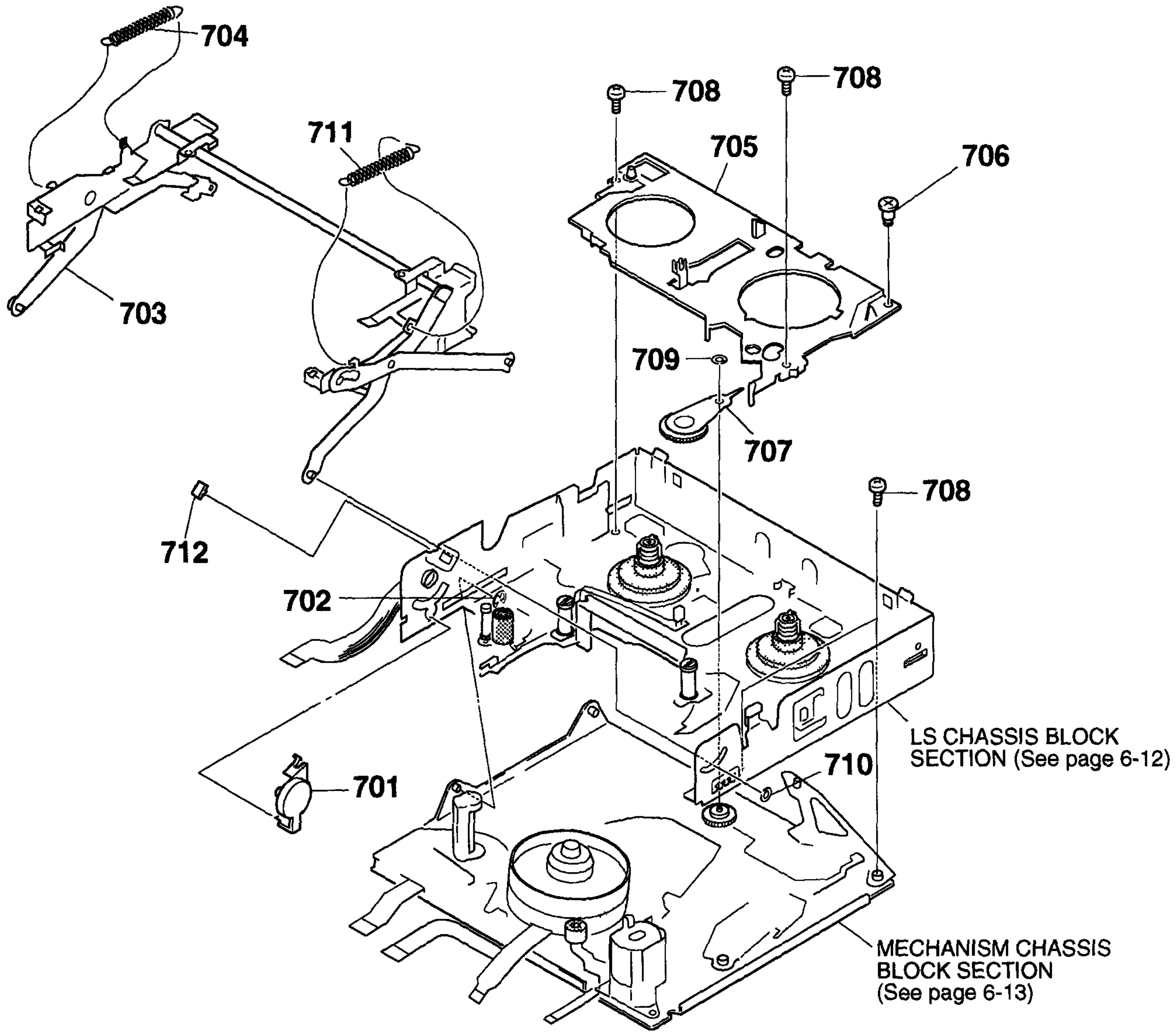
504

Ref. No.	Part No.	Description	Remark
501	8-848-710-01	LENS, ZOOM (VCL-4214VA)	
502	A-4910-808-A	DEVICE ASSY, LSV-510A (RP)	
503	3-713-791-41	SCREW (M1.7X5), TAPPING, PS	
504	3-708-302-01	SCREW (BT3 P1 7X4C)	
M905	1-698-760-01	MOTOR, FOCUS STEPPING	
M906	1-698-759-01	MOTOR, ZOOM STEPPING	

6-1-11. CASSETTE COMPARTMENT ASSEMBLY


704
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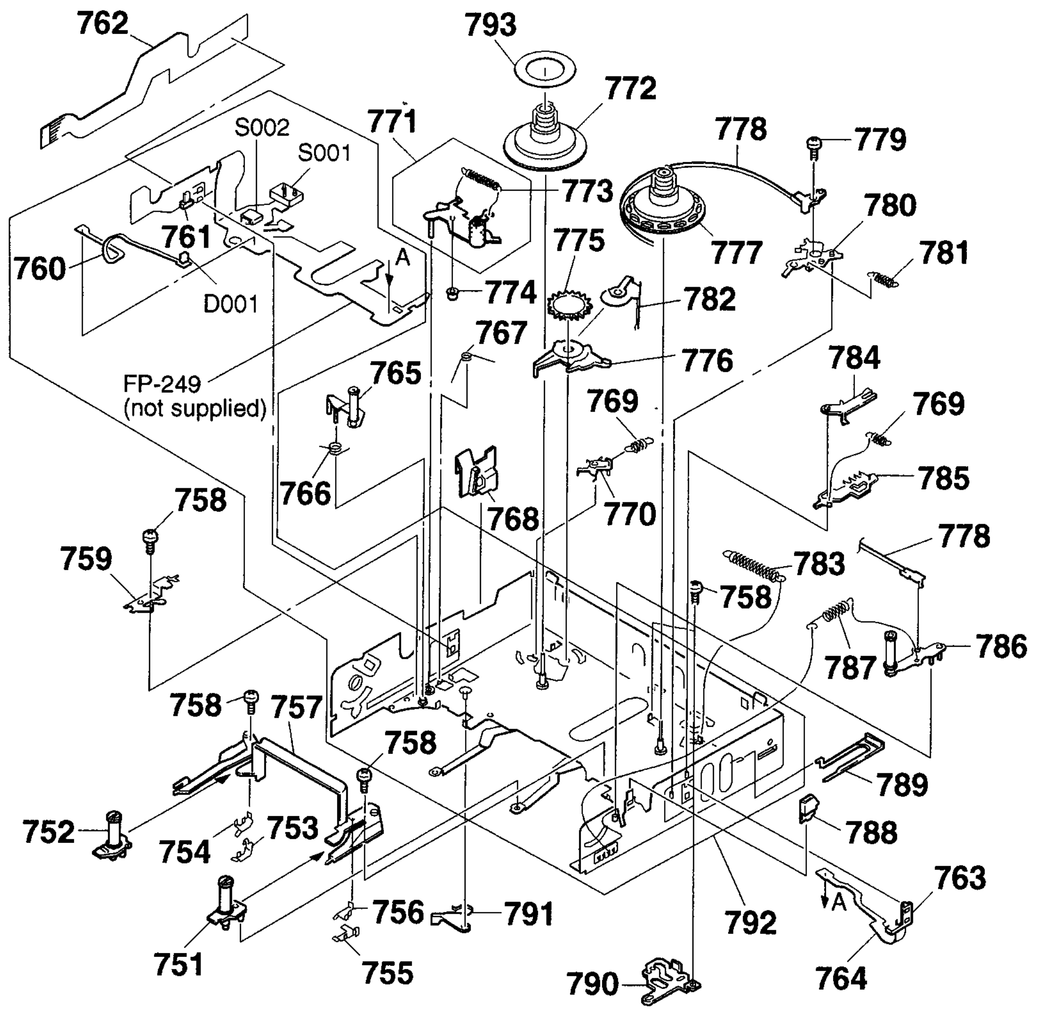
702
LS CHASSIS BLOCK SECTION (See page 6-12)
710
701
MECHANISM CHASSIS BLOCK SECTION (See page 6-13)

Ref No	Part No.	Description	Remark
701	A-7040-421-A	DAMPER ASSY	
702	7-624-102-04	STOP RING 1 5, TYPE -E	
703	X-3945-400-1	CASSETTE COMPARTMENT ASSY	
704	3-965-587-03	SPRING, TENSION	
705	3-965-584-01	RETAINER, GOOSENECK	
706	3-976-055-01	SCREW (M1 4X1)	
707	X-3945-399-1	GEAR ASSY, GOOSENECK	
708	3-947-503-01	SCREW (M1 4X2 5)	
709	3-331-007-21	WASHER	
710	3-727-176-01	WASHER, STOPPER	
711	3-973-268-01	SPRING, TENSION	
712	3-971-076-01	FASTENER, D	

6-1-12. LS CHASSIS ASSEMBLY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772
771
S002
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761
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D001
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767
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765
FP-249
(not supplied)
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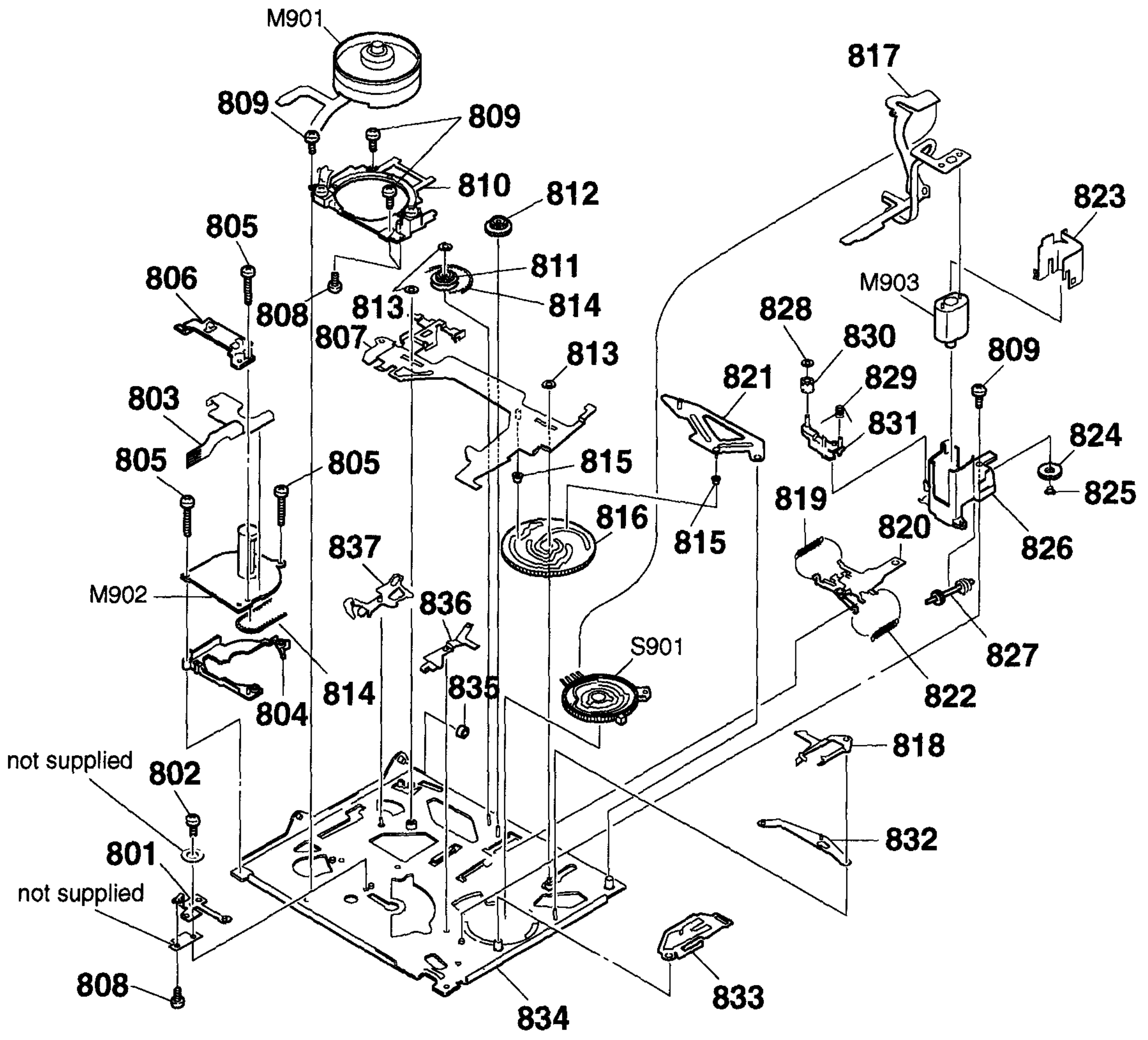
764

Ref No	Part No	Description	Remark
751	A-7040-419-A	BASE (S) BLOCK ASSY, GUIDE	
752	A-7040-418-B	BASE (T) BLOCK ASSY, GUIDE	
753	3-965-559-01	STOPPER (T)	
754	3-965-557-01	STOPPER (T), GB	
755	3-965-558-01	STOPPER (S)	
756	3-965-556-01	STOPPER (S), GB	
757	3-965-553-01	RAIL, GUIDE	
758	3-947-503-01	SCREW (M1 4X2 5)	
759	3-965-573-01	RETAINER, TG4	
760	1-658-213-11	FP-355 FLEXIBLE BOARD	
761	3-965-552-01	HOLDER (T), SENSOR	
762	1-657-786-11	FP-221 FLEXIBLE BOARD	
763	3-965-551-01	HOLDER (S), SENSOR	
764	1-658-214-11	FP-356 FLEXIBLE BOARD	
765	A-7040-417-A	ARM BLOCK ASSY, TG4	
766	3-965-574-01	SPRING, TORSION	
767	3-965-575-01	SPRING (PINCH), TORSION	
768	3-965-568-01	GUIDE, LOCK	
769	3-965-562-01	SPRING (RATCHET), TENSION	
770	3-965-581-01	RATCHET, T	
771	X-3945-394-1	ARM ASSY, PINCH	
772	X-3945-398-1	DECK ASSY, REEL, T	
773	3-965-648-01	SPRING (PINCH), TENSION	
774	3-965-579-01	ROLLER, PINCH PRESS	
775	3-965-563-01	GEAR, T SOFT	
776	3-965-565-01	CLAW, T SOFT	
777	X-3945-397-1	DECK ASSY, REEL, S	
778	X-3945-396-1	BAND ASSY, TENSION REGULATOR	
779	3-945-756-01	SCREW (M1 4X3)	
780	3-965-583-01	ARM, RVS	
781	3-965-580-01	SPRING, TENSION	
782	3-966-384-01	SPRING, T SOFT	
783	3-965-578-01	SPRING, TENSION	
784	3-965-560-01	RATCHET, S	
785	3-965-561-01	PLATE, RELEASE, S RATCHET	
786	X-3945-395-1	ARM ASSY, TG1	
787	3-965-576-01	SPRING (TG1), TENSION	
788	3-965-567-01	LID OPEN	
789	3-965-566-01	COVER, LS GUIDE	
* 790	3-965-577-01	PLATE, CAM, LS	
791	3-965-569-01	ARM, EJ	
792	A-7040-427-A	CHASSIS (S1) ASSY, LS	
* 793	3-972-838-01	SPACER, REEL	
D001	8-719-988-42	DIODE GL453	
S001	1-692-614-11	SWITCH, PUSH (3 KEY) (Hi8 MP, ME/MP, REC PROOF)	
S002	1-572-688-11	SWITCH, PUSH (1 KEY)(C C LOCK)	

6-1-13. MECHANISM CHASSIS ASSEMBLY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M903
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815
825
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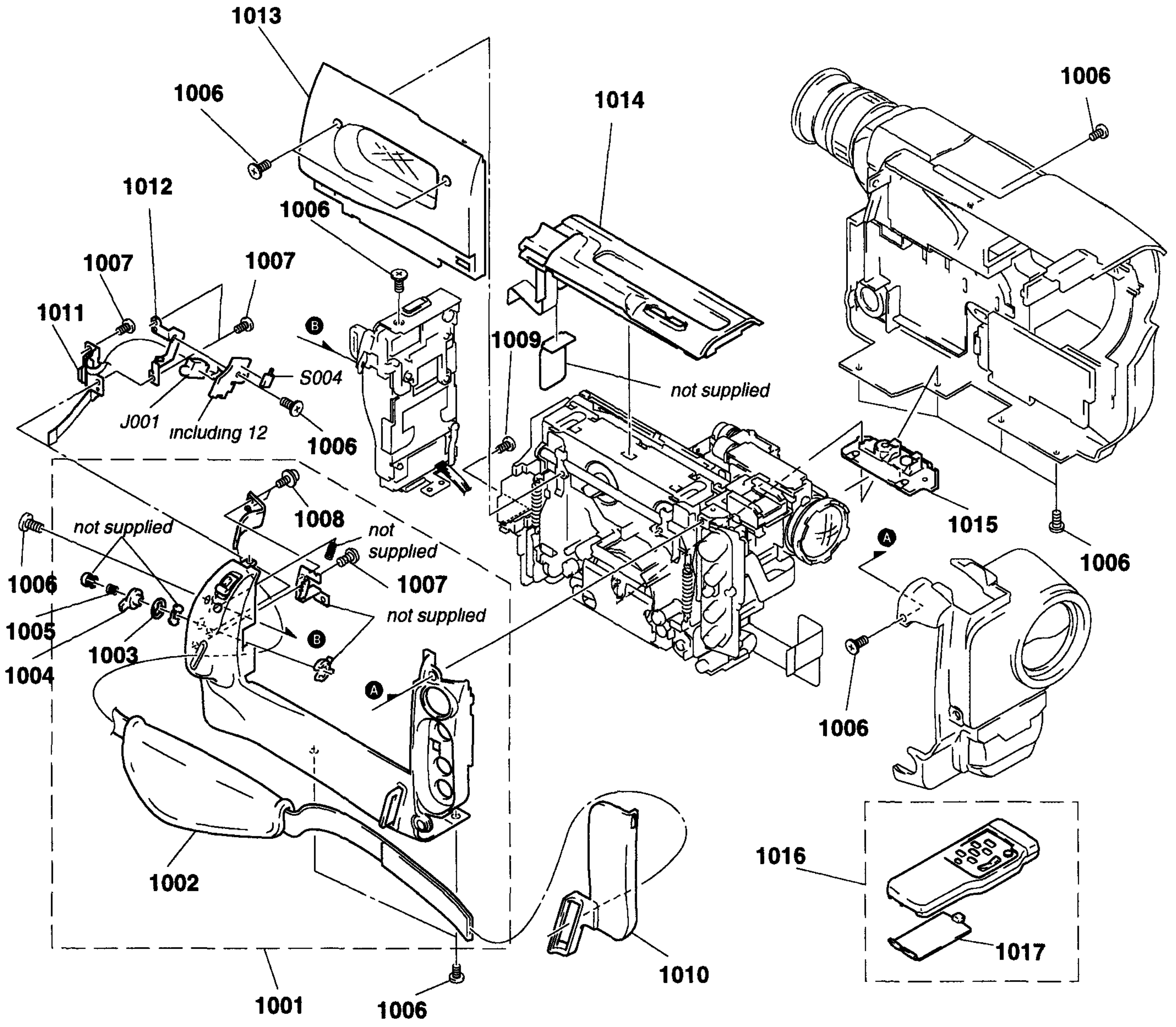
M902
836
S901
827
814
835
822
804
818
not supplied
802
801
832
not supplied
808
834
833

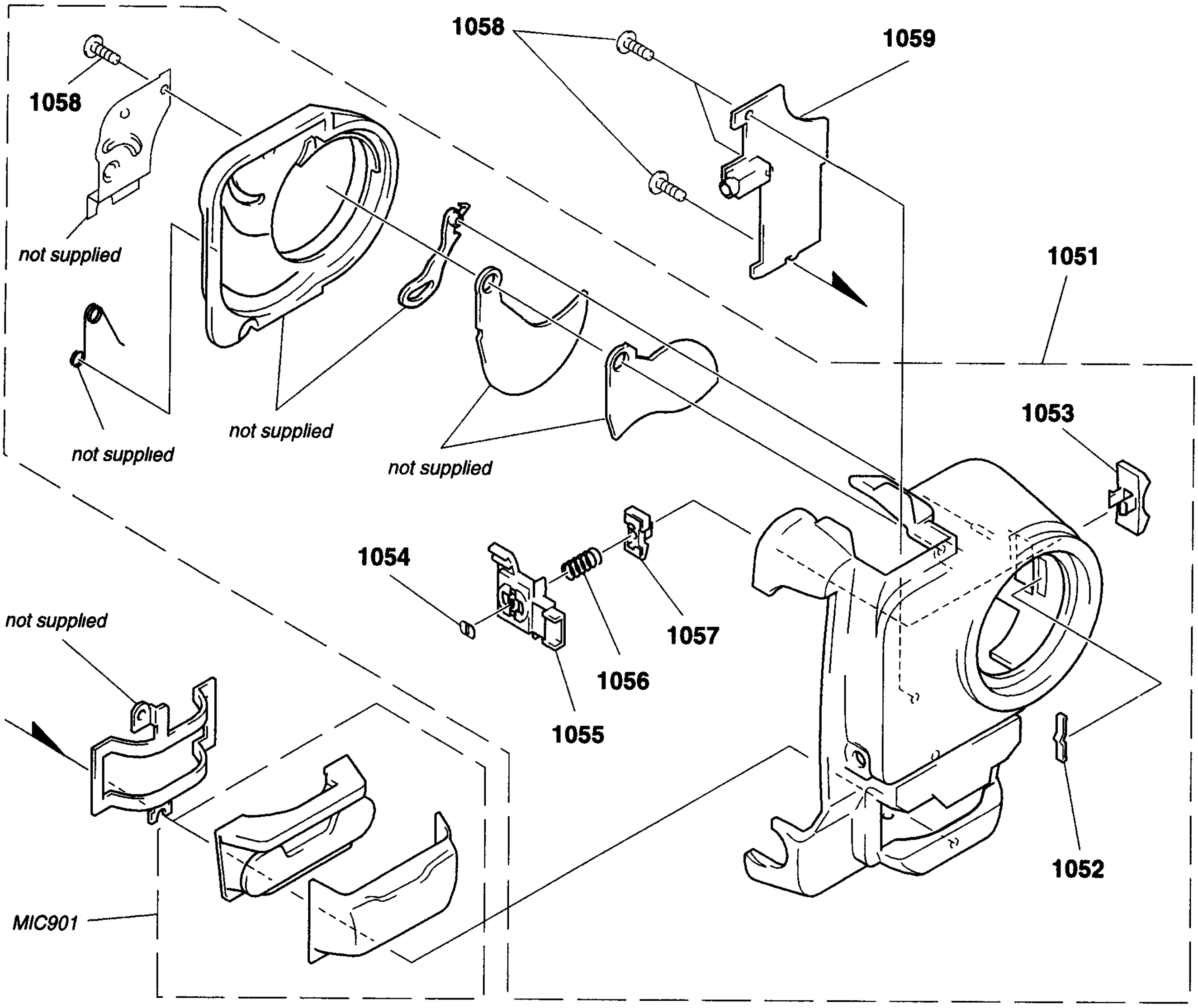
Ref No	Part No	Description	Remark
801	X-3947-343-1	GROUND (IM) ASSY, SHAFT	
802	3-965-550-02	SCREW (M1 7X1 6)	
803	1-657-785-11	FP-248 FLEXIBLE BOARD	
804	3-965-545-01	SPACER, CAPSTAN	
805	3-965-549-01	SCREW (M1 4 X 6 5)	
806	3-966-349-01	HOLDER, FLEXIBLE	
807	3-971-644-01	SLIDER (2), M	
808	3-971-939-01	SCREW (M1 4)	
809	3-947-503-01	SCREW (M1 4X2 5)	
810	A-7040-416-A	BASE BLOCK ASSY, DRUM	
811	3-965-527-01	GEAR, CHANGE	
812	3-965-544-01	GEAR, RELAY	
813	3-331-007-21	WASHER	
814	3-965-546-01	BELT, TIMING	
815	3-965-533-01	ROLLER, LS	
816	3-965-528-01	GEAR, CAM	
817	1-657-784-11	FP-220 FLEXIBLE BOARD	
818	3-965-529-01	PLATE, REGULATOR, TENSION	
819	3-965-536-01	SPRING, TENSION	
820	X-3945-388-1	SLIDER ASSY, GL	
821	3-965-532-01	ARM, LS	
822	3-965-535-01	SPRING, TENSION	
823	3-965-542-01	SHIELD, MOTOR	
824	3-965-539-01	GEAR (A)	
825	3-965-538-01	SLEEVE, MOTOR HOLDER	
826	3-965-540-01	HOLDER, MOTOR	
827	3-965-541-01	SHAFT, WORM	
828	3-321-393-01	WASHER, STOPPER	
829	3-965-724-01	SPRING, TORSION	
830	A-7040-423-A	ROLLER BLOCK ASSY, HC	
831	X-3945-407-1	ARM ASSY, HC ROLLER	
832	3-965-531-01	ARM, GL	
833	3-965-530-01	PLATE (2), REGULATOR, TENSION	
834	X-3946-548-2	CHASSIS ASSY, MECHANICAL	
835	3-965-526-02	ROLLER, LS GUIDE	
836	3-965-547-01	ARM, HC DRIVING	
837	3-965-534-01	PLATE, PRESS, PINCH	
M901	A-7048-849-A	DRUM ASSY (DGH-04DA-R) (TRV62/TRV72/TRV82/TRV94)	
M901	A-7048-851-A	DRUM ASSY (DGH-05DA-R) (TRV54E/TRV56E/TRV64E/TRV94E)	
M902	8-835-531-01	MOTOR, DC SCE-0601A (CAPSTAN)	
M903	X-3945-401-1	MOTOR ASSY, DC (LOADING)	
S901	1-762-436-15	SWITCH, ROTARY (ENCODER)	

6-1-14. CABINET (L) BLOCK ASSEMBLY (TRV64E)


1013
1006
1014
1006
1012
1006
1007
1007
1011
B
S004
1009
not supplied
J001
including 12
1006
1008
not supplied
not supplied
1015
A
1006
1007
1006
1005
1004
1003
not supplied
B
A
1006
1016
1002
1017
1010
1001
1006

Ref. No.	Part No.	Description	Remark
1001	X-3947-247-1	CABINET (L) ASSY (CH)	
1001	X-3947-434-1	CABINET (L) ASSY (EXCEPT CH)	
1002	3-969-339-31	BELT, GRIP	
1003	3-970-854-01	SPRING, STAND-BY	
1004	3-969-081-01	KNOB, STAND-BY	
1005	3-972-501-01	SPRING, COMPRESSION	
1006	3-968-729-01	SCREW (M2), LOCK ACE, P2	
1007	3-948-339-61	TAPPING	
1008	3-679-362-11	SCREW	
1009	3-713-786-21	SCREW (M2X3)	
1010	3-975-522-01	COVER, JACK	
1011	1-475-098-21	SWITCH BLOCK, CONTROL(SS-8100)	
* 1012	3-975-532-01	HOLDER, EL	
1013	X-3947-199-1	LID ASSY, CASSETTE (EXCEPT CH)	
1013	X-3947-378-1	LID ASSY, CASSETTE (CH)	
1014	1-475-099-81	SWITCH BLOCK, VTR CONTROL(FK) (CH)	
1014	1-475-099-91	SWITCH BLOCK, VTR CONTROL(FK) (EXCEPT CH)	
1015	3-975-516-01	SCREW, TRIPOD	
1016	1-467-574-21	REMOTE COMMANDER (RMT-708)	
1017	3-958-131-01	LID, BATTERY CASE (for RMT-708)	
J001	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)	
S004	1-572-688-11	SWITCH, PUSH (1 KEY)(EJECT)	

6-1-15. FRONT PANEL BLOCK ASSEMBLY (TRV64E)


1058
1058
1059
not supplied
1051
not supplied
not supplied
not supplied
1053
1054
1057
not supplied
1056
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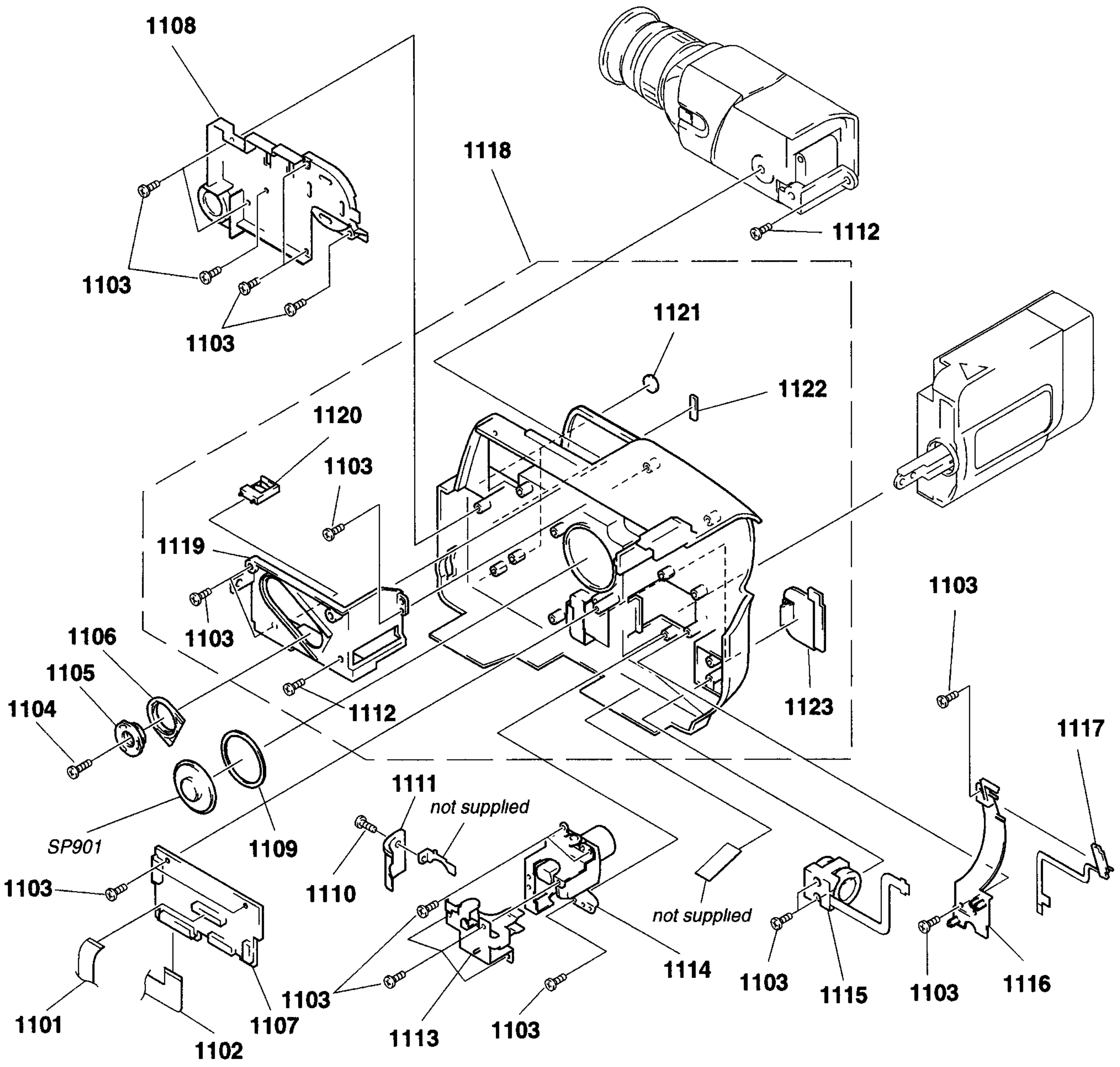
1052
MIC901

Ref No.	Part No.	Description	Remark
1051	X-3947-375-1	PANEL ASSY, F (EXCEPT CH)	
1051	X-3947-380-1	PANEL ASSY (CN), F (CH)	
1052	3-969-270-01	SPRING, CLICK	
1053	3-976-301-01	KNOB, POWER	
1054	3-976-339-01	SPACER (819), PW	
1055	3-976-302-01	HOLDER, POWER KNOB	

Ref No.	Part No.	Description	Remark
1056	3-965-034-01	SPRING, COMPRESSION	
1057	3-976-303-01	BUTTON, POWER LOCK	
1058	3-948-339-61	TAPPING	
1059	A-7073-210-A	MA-298 (VH25PE) BOARD, COMPLETE	
MIC901	1-542-313-11	MICROPHONE UNIT (L/R-CH)	

6-1-16. CABINET (R) BLOCK ASSEMBLY (TRV64E)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1119
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1106
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1117
1111
not supplied
SP901
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1103
1110
not supplied
1114
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1115
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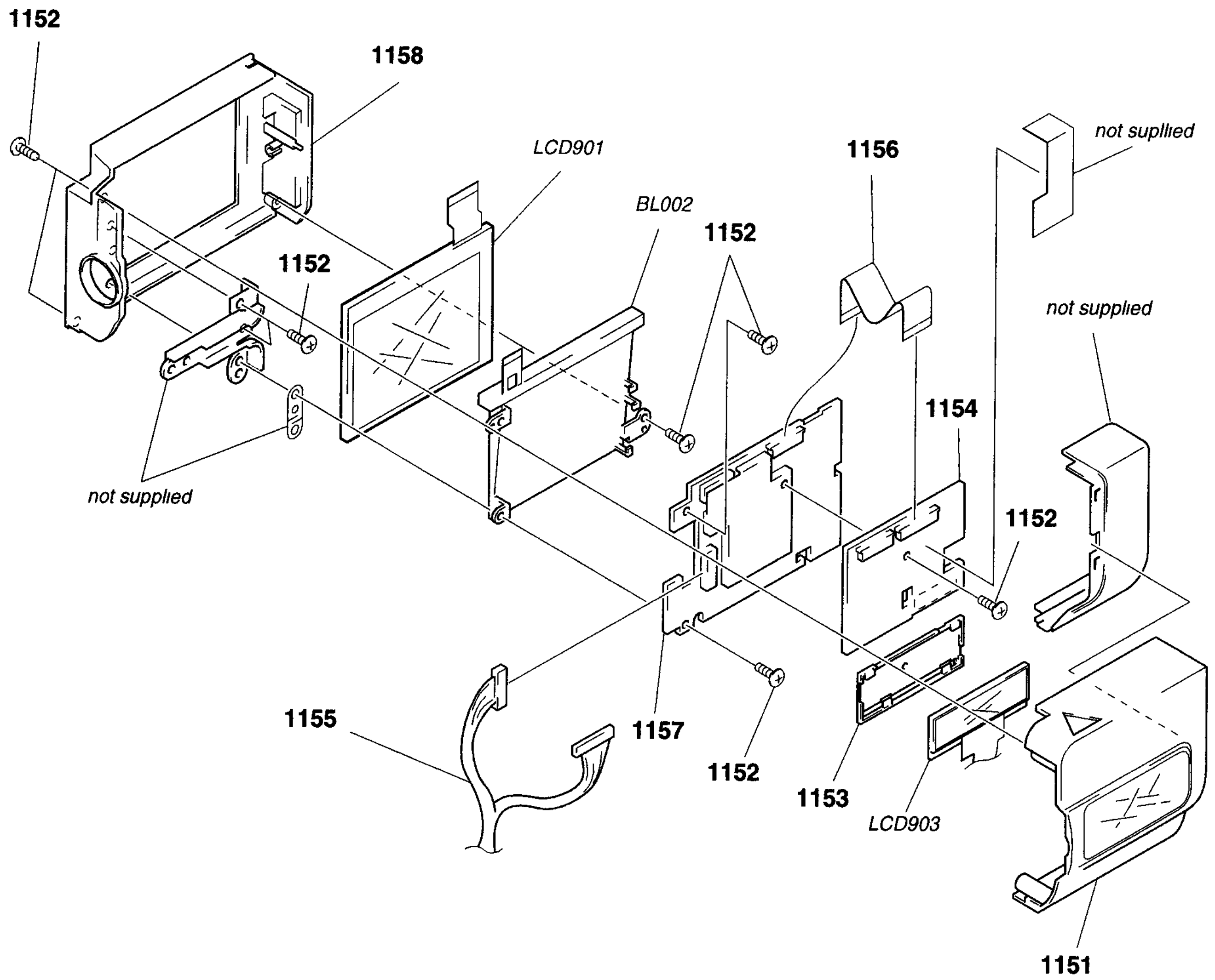
1103

Ref No	Part No	Description	Remark
1101	1-665-144-11	FP-503 FLEXIBLE BOARD	
1102	1-665-143-11	FP-502 FLEXIBLE BOARD	
1103	3-948-339-61	TAPPING	
1104	3-948-339-11	SCREW, TAPPING	
1105	3-974-325-01	FLANGE, ROTARY	
1106	3-974-326-01	FLANGE, SLIDER	
1107	A-7073-211-A	SD-28 BOARD, COMPLETE	
1108	1-475-158-11	SWITCH BLOCK, CONTROL	
1109	3-965-367-01	SPACER, SP	
1110	3-968-729-01	SCREW (M2), LOCK ACE, P2	
1111	3-975-373-01	COVER (LOWER), HINGE	
1112	3-948-339-01	SCREW, TAPPING	
1113	X-3947-174-1	PLATE ASSY, REGURATION	
1114	X-3947-376-1	HINGE ASSY (819)	
1115	1-475-068-31	SWITCH BLOCK, CONTROL(MF-7800)	
* 1116	3-976-297-01	HOLDER, PW	
1117	1-473-602-31	SWITCH BLOCK, CONTROL(PS-6500)	
1118	X-3947-373-1	CABINET (R) ASSY (EXCEPT CH)	
1118	X-3947-379-1	CABINET (R) ASSY (CH)	
* 1119	3-976-296-01	BASE (819), TILT	
* 1120	3-976-338-01	LOCK (819), TILT	
1121	3-959-978-02	CUSHION, PANEL	
1122	3-975-408-01	CUSHION, PANEL LOCK	
1123	3-968-878-01	LID, LITHIUM BATTERY	
SP901	1-504-753-21	SPEAKER (2.8 CM)	

6-1-17. 2.5 INCH LCD BLOCK ASSEMBLY (TRV64E)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BL002
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1152
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1154
not supplied
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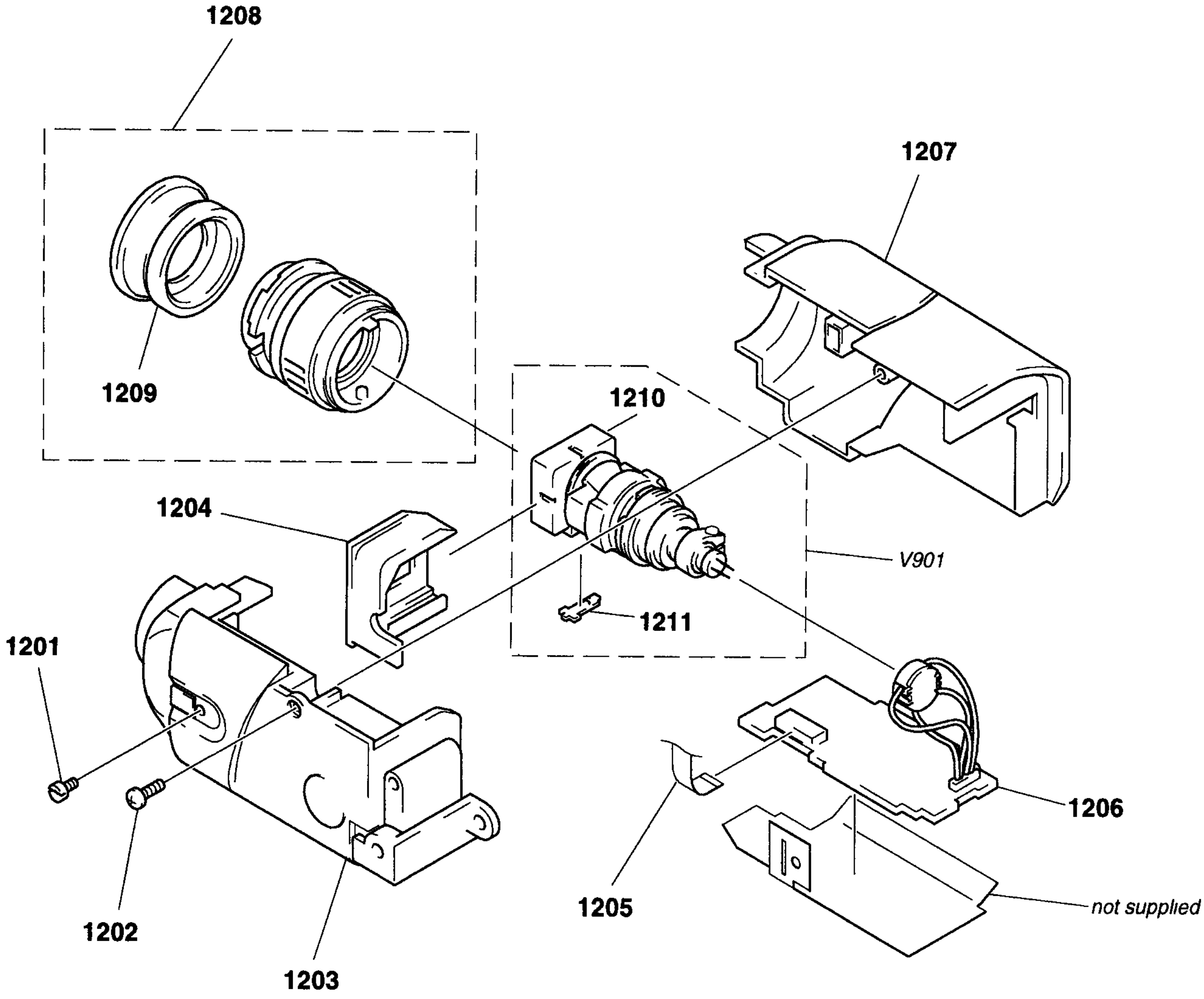
LCD903
1151

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité Ne les remplacer que par une piéce portant le numéro spécifié

Ref No	Part No.	Description	Remark
1151	X-3947-378-1	CABINET (C) ASSY, PANEL	
1152	3-968-729-01	SCREW (M2), LOCK ACE, P2	
* 1153	3-976-329-01	HOLDER (819), LCD	
1154	A-7093-198-A	PC-65 (C25PE) BOARD, COMPLETE	(EXCEPT CH)
1154	A-7093-203-A	PC-65 (C25CN) BOARD, COMPLETE (CH)	
1155	1-957-149-11	HARNESS, PD-106	
1156	1-665-669-11	FP-529 FLEXIBLE BOARD	
1157	A-7093-196-A	PD-82 (C25PE) BOARD, COMPLETE	(EXCEPT CH)
1157	A-7093-202-A	PD-82 (C25CN) BOARD, COMPLETE (CH)	
1158	X-3947-377-1	CABINET (M) ASSY, PANEL	
⚠BL002	1-517-524-91	TUBE, FLUORESCENT, COLD CATHODE	
LCD901	1-801-697-21	DISPLAY PANEL, LIQUID CRYSTAL	
LCD903	1-801-662-21	INDICATOR MODULE, LIQUID CRYST	

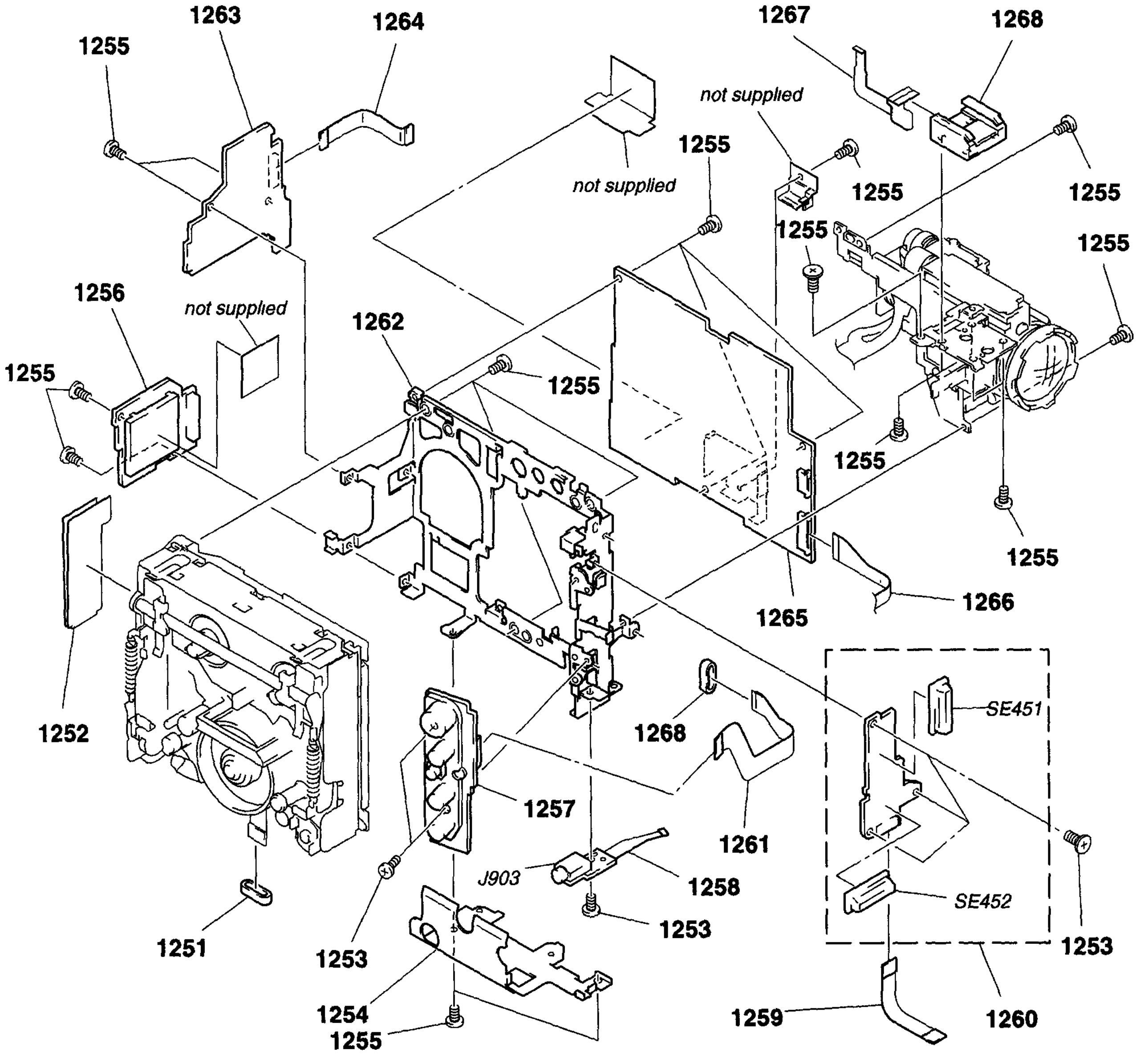
6-1-18. EVF BLOCK ASSEMBLY (BW EVF) (TRV64E)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
1201	3-975-898-01	SCREW (T), F LOCK	
1202	3-948-339-01	SCREW, TAPPING	
1203	X-3946-883-1	CABINET (L) ASSY, EVF	
* 1204	X-3947-303-1	COVER ASSY, CRT	
1205	1-665-668-11	FP-509 FLEXIBLE BOARD	
1206	A-7073-078-A	VF-102 (8P) BOARD, COMPLETE	
1207	3-974-155-21	CABINET (R), EVF	
1208	X-3944-966-1	FINDER ASSY	
1209	3-963-391-01	EYE CUP	
1210	3-709-273-01	CRT MASK	
1211	3-709-272-01	COVER, HIGH VOLTAGE	
⚠V901	1-452-673-31	CRT ASSY (M01KXX90WB)	

6-1-19. MAIN BOARDS ASSEMBLY (TRV64E)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SE451
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J903
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SE452
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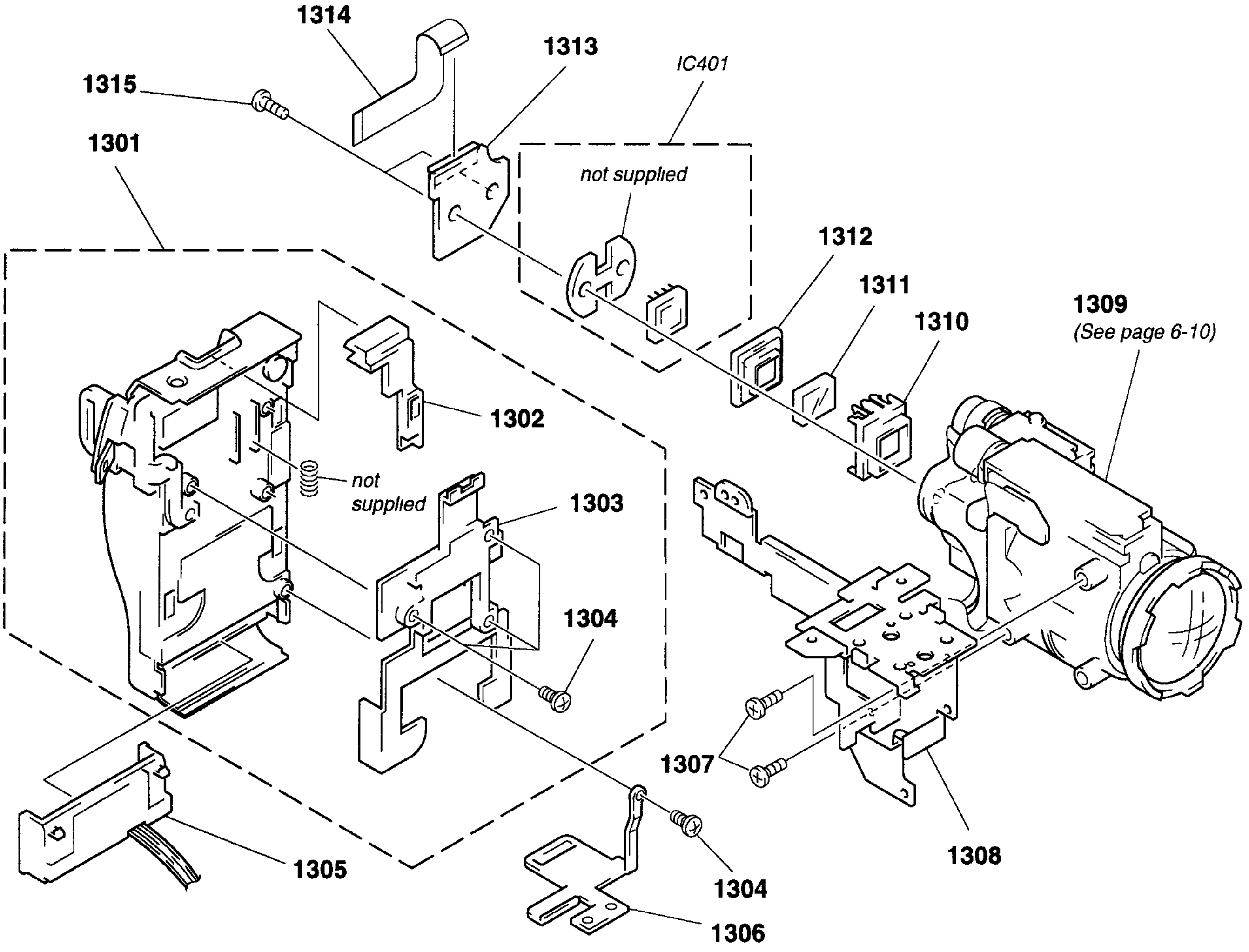
Ref No	Part No.	Description	Remark
1251	1-500-227-11	BEAD, FERRITE (EXCEPT CH)	
1252	3-975-520-01	SHEET, LS FLEXIBLE GUARD	
1253	3-968-729-01	SCREW (M2), LOCK ACE, P2	
* 1254	3-975-534-01	FRAME (B), MD	
1255	3-713-786-21	SCREW (M2X3)	
1256	A-7093-197-A	DD-95 (VH25PE) BOARD, COMPLETE	
1257	A-7073-101-A	PJ-80 (VHCRJ) BOARD, COMPLEE (CH)	
1257	A-7073-121-A	PJ-80 (VHCRP) BOARD, COMPLEE (EXCEPT CH)	
1258	1-665-148-11	FP-527 FLEXIBLE BOARD	
1259	1-660-277-11	FP-377 FLEXIBLE BOARD	
1260	A-7073-099-A	SE-61 (VHCRJ) BOARD, COMPLETE	
1261	1-665-146-11	FP-516 FLEXIBLE BOARD	
1262	3-975-515-01	FRAME, MD	
1263	A-7073-174-A	MM-35 (HCI) BOARD, COMPLETE	
1264	1-665-142-11	FP-500 FLEXIBLE BOARD	
1265	A-7093-195-A	VC-190 (VH25PE) BOARD, COMPLETE (EXCEPT CH)	
1265	A-7093-201-A	VC-190 (VH25CN) BOARD, COMPLETE (CH)	
1266	1-665-674-11	FP-515 FLEXIBLE BOARD	
1267	1-660-300-11	FP-426 FLEXIBLE BOARD	
1268	1-500-226-31	BEAD, FERRITE (EXCEPT CH)	
J903	1-695-514-21	JACK (SMALL TYPE) 1P (HEADPHONES)	

6-1-20. BATTERY PANEL ASSEMBLY AND CCD BLOCK ASSEMBLY (TRV64E)


1314
1313
IC401
1315
1301
not supplied
1312
1311
1310
1309
(See page 6-10)
1302
not supplied
1303
1304
1307
1305
1308
1304
1306

Be sure to read "Note on the CCD Imager replacement" on page 4–10 when changing the CCD imager.

Ref No	Part No	Description	Remark
1301	X-3947-374-1	PANEL ASSY, BATTERY	
1302	3-975-500-11	KNOB, RELEASE	
* 1303	3-975-501-01	COVER, LOCK	
1304	3-713-791-51	SCREW (M1 7X3.5), TAPPING, P2	
1305	1-694-076-21	TERMINAL BOARD, BATTERY	
* 1306	3-975-524-01	SHEET METAL (LOWER), STRAP	
1307	3-948-339-61	TAPPING	
1308	3-975-946-01	FRAME, LENS	
1309	8-848-710-01	LENS, ZOOM (VCL-4214VA)	
1310	3-963-467-11	ADAPTOR (FH), CCD FITTING	
1311	1-547-787-41	FILTER BLOCK, OPTICAL	
1312	3-961-192-01	RUBBER (FH), SEAL	
1313	A-7073-100-A	CD-166 BOARD, COMPLETE	
1314	1-665-681-11	FP-524 FLEXIBLE BOARD	
1315	3-318-203-11	SCREW (B1 7X6), TAPPING	
IC401	A-7030-782-A	CCD BLOCK ASSY (211 SERVICE)	(CCD IMAGER)

6-2. ELECTRICAL PARTS LIST

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié

When indicating parts by reference number, please include the board name

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set
- -XX, -X mean standardized parts, so they may have some difference from the original one
- Items marked "*" are not stocked since they are seldom required for routine service Some delay should be anticipated when ordering these items
- RESISTORS
  All resistors are in ohms
  METAL Metal-film resistor
  METAL OXIDE· Metal Oxide-film resistor
  F · nonflammable
- SEMICONDUCTORS
  In each case, u μ , for example
  uA μ A .., uPA μ PA.. , uPB μ PB
  uPC μ PC , uPD μ PD
- CAPACITORS
  uF μ F
- COILS
  uH μ H
- Abbreviation
  Canadian model is abbreviated as CND
  East European model is abbreviated as EE
  Hong Kong model is abbreviated as HK
  Australian model is abbreviated as AUS
  Tourist model is abbreviated as JE
  Chinese model is abbreviated as CH
  North European model is abbreviated as NE.
  Russian model is abbreviated as RU

Ref No	Part No	Description			Remark
	A-7073-100-A	CD-166 BOARD, COMPLETE			
		************************			
		(Ref No 3,000 Series)			
		(IC401 is not included to mounted board)			
		< CAPACITOR >			
C401	1-164-156-11	CERAMIC CHIP	0 1uF		25V
C405	1-107-686-11	TANTAL CHIP	4 7uF	20%	16V
C406	1-107-686-11	TANTAL CHIP	4 7uF	20%	16V
C407	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CN401	1-766-677-21	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC401	A-7030-615-A	CCD BLOCK ASSY (079 SERVICE)(CCD IMAGER) (TRV62/TRV72/TRV82/TRV94)			
IC401	A-7030-782-A	CCD BLOCK ASSY (211 SERVICE)(CCD IMAGER) (TRV54E/TRV56E/TRV64E/TRV94E)			
		< COIL >			
L401	1-412-963-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q402	8-729-117-73	TRANSISTOR	2SC4178-F14		
		< RESISTOR >			
R404	1-216-829-11	METAL CHIP	4 7K	5%	1/16W

Ref No	Part No	Description			Remark
	A-7093-186-A	DD-95 (VHCRJ) BOARD, COMPLETE (TRV94)			
		**			
	A-7093-192-A	DD-95 (VHCRP) BOARD, COMPLETE (TRV94E)			
		**			
	A-7093-197-A	DD-95 (VH25PE) BOARD, COMPLETE			
		******************************			
		(TRV54E/TRV56E/TRV64E)			
	A-7093-235-A	DD-95 (VHCI) BOARD, COMPLETE			
		****************************			
		(TRV62/TRV72/TRV82)			
		(Ref No 5,000 Series)			
		< CAPACITOR >			
C501	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C502	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C503	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C504	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C505	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C506	1-162-967-11	CERAMIC CHIP	0 0033uF	10%	50V
C507	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V
C508	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V
C509	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C510	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C511	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C512	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C513	1-162-967-11	CERAMIC CHIP	0 0033uF	10%	50V
C514	1-162-966-11	CERAMIC CHIP	0 0022uF	10%	50V
C515	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C516	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C517	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C518	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C525	1-135-159-21	TANTALUM CHIP	10uF	10%	20V
C526	1-135-159-21	TANTALUM CHIP	10uF	10%	20V
C527	1-135-165-11	TANTAL CHIP	33uF	20%	16V
C529	1-135-159-21	TANTALUM CHIP	10uF	10%	20V
C530	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C531	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C532	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C533	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C534	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C535	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C536	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C537	1-135-157-21	TANTALUM CHIP	10uF	20%	6 3V

Be sure to read "Note on the CCD Imager replacement" on page 4–10 when changing the CCD imager.

Ref. No	Part No	Description			Remark
C538	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C539	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C540	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C541	1-135-214-21	TANTAL. CHIP	4.7uF	20%	20V
C542	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C543	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C544	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C545	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C546	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C547	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C548	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C549	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C550	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V (TRV62/TRV72/TRV82/TRV94/TRV94E)
C551	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
		< CONNECTOR >			
CN501	1-569-775-21	PIN, CONNECTOR 5P			
CN502	1-691-520-11	CONNECTOR, BOARD TO BOARD 48P			
		< DIODE >			
D501	8-719-057-68	DIODE	SBS001C-TB		
D502	8-719-057-68	DIODE	SBS001C-TB		
D503	8-719-057-68	DIODE	SBS001C-TB		
D504	8-719-057-68	DIODE	SBS001C-TB		
D505	8-719-027-77	DIODE	MA796-TX		
D506	8-719-057-68	DIODE	SBS001C-TB		
D507	8-719-420-14	DIODE	MA8082-M		
D508	8-719-420-14	DIODE	MA8082-M		
		< IC >			
IC501	8-759-350-29	IC	SN104213PM-T6		
		< COIL >			
L501	1-409-529-41	COIL, CHOKE	10uH		(TRV54E/TRV56E/TRV64E)
L501	1-424-653-11	COIL, CHOKE	10uH		(TRV62/TRV72/TRV82/TRV94/TRV94E)
L502	1-409-529-41	COIL, CHOKE	10uH		(TRV54E/TRV56E/TRV64E)
L502	1-424-653-11	COIL, CHOKE	10uH		(TRV62/TRV72/TRV82/TRV94/TRV94E)
L503	1-409-529-41	COIL, CHOKE	10uH		(TRV54E/TRV56E/TRV64E)
L503	1-424-653-11	COIL, CHOKE	10uH		(TRV62/TRV72/TRV82/TRV94/TRV94E)
L504	1-424-674-11	COIL, CHOKE	22uH		
L505	1-409-532-41	COIL, CHOKE	33uH		(TRV54E/TRV56E/TRV64E)
L505	1-424-675-11	COIL, CHOKE	33uH		(TRV62/TRV72/TRV82/TRV94/TRV94E)
L506	1-424-674-11	COIL, CHOKE	22uH		
L507	1-424-674-11	COIL, CHOKE	22uH		
L508	1-414-396-21	INDUCTOR	4.7uH		
L509	1-414-396-21	INDUCTOR	4.7uH		
L511	1-414-406-11	INDUCTOR	220uH		
L512	1-424-674-11	COIL, CHOKE	22uH		
L513	1-414-400-11	INDUCTOR	22uH		

Ref. No	Part No	Description			Remark
L514	1-414-396-21	INDUCTOR	4.7uH		
L515	1-414-396-21	INDUCTOR	4.7uH		
L516	1-414-396-21	INDUCTOR	4.7uH		
		< IC LINK >			
⚠PS501	1-533-709-21	FUSE (SMD) 1.25A DC24V			(TRV62/TRV72/TRV82)
⚠PS501	1-533-711-21	LINK, IC (SMD) 1.25A			(TRV54E/TRV56E/TRV64E/TRV94/TRV94E)
⚠PS502	1-533-709-21	FUSE (SMD) 1.25A DC24V			(TRV62/TRV72/TRV82)
⚠PS502	1-533-711-21	LINK, IC (SMD) 1.25A			(TRV54E/TRV56E/TRV64E/TRV94/TRV94E)
⚠PS503	1-533-709-21	FUSE (SMD) 1.25A DC24V			(TRV62/TRV72/TRV82)
⚠PS503	1-533-711-21	LINK, IC (SMD) 1.25A			(TRV54E/TRV56E/TRV64E/TRV94/TRV94E)
⚠PS504	1-533-709-21	FUSE (SMD) 1.25A DC24V			(TRV62/TRV72/TRV82)
⚠PS504	1-533-711-21	LINK, IC (SMD) 1.25A			(TRV54E/TRV56E/TRV64E/TRV94/TRV94E)
⚠PS505	1-533-709-21	FUSE (SMD) 1.25A DC24V			(TRV62/TRV72/TRV82)
⚠PS505	1-533-711-21	LINK, IC (SMD) 1.25A			(TRV54E/TRV56E/TRV64E/TRV94/TRV94E)
		< TRANSISTOR >			
Q501	8-729-039-86	TRANSISTOR	FMMT717TA		
Q502	8-729-039-86	TRANSISTOR	FMMT717TA		
Q503	8-729-039-86	TRANSISTOR	FMMT717TA		
Q504	8-729-039-86	TRANSISTOR	FMMT717TA		
Q505	8-729-041-24	TRANSISTOR	NDS355AN		
Q506	8-729-804-41	TRANSISTOR	2SB1122-S		
Q507	8-729-039-86	TRANSISTOR	FMMT717TA		
Q508	8-729-429-18	TRANSISTOR	UN9213		
Q509	8-729-425-50	TRANSISTOR	2SB1462Q		
Q510	8-729-425-50	TRANSISTOR	2SB1462Q		
Q511	8-729-425-64	TRANSISTOR	2SD2216Q		
Q512	8-729-425-64	TRANSISTOR	2SD2216Q		
Q513	8-729-425-64	TRANSISTOR	2SD2216Q		
Q514	8-729-429-18	TRANSISTOR	UN9213		
Q515	8-729-041-23	TRANSISTOR	NDS356AP		
Q517	8-729-429-18	TRANSISTOR	UN9213		(TRV62/TRV72/TRV82/TRV94/TRV94E)
Q518	8-729-041-23	TRANSISTOR	NDS356AP		(TRV62/TRV72/TRV82/TRV94/TRV94E)
Q519	8-729-429-18	TRANSISTOR	UN9213		
Q520	8-729-429-18	TRANSISTOR	UN9213		
Q521	8-729-041-24	TRANSISTOR	NDS355AN		
		< RESISTOR >			
R501	1-216-841-11	METAL CHIP	47K	5%	1/16W
R502	1-216-837-11	METAL CHIP	22K	5%	1/16W
R503	1-216-839-11	METAL CHIP	33K	5%	1/16W
R504	1-216-833-11	METAL CHIP	10K	5%	1/16W
R505	1-218-907-11	METAL GLAZE	330K	0.50%	1/16W
R506	1-216-836-11	METAL CHIP	18K	5%	1/16W
R507	1-216-813-11	METAL CHIP	220	5%	1/16W
R508	1-216-845-11	METAL CHIP	100K	5%	1/16W
R509	1-216-821-11	METAL CHIP	1K	5%	1/16W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref No	Part No	Description			Remark
R510	1-216-837-11	METAL CHIP	22K	5%	1/16W
R511	1-216-839-11	METAL CHIP	33K	5%	1/16W
R512	1-216-857-11	METAL CHIP	1M	5%	1/16W
R513	1-216-864-11	METAL CHIP	0	5%	1/16W
R514	1-216-837-11	METAL CHIP	22K	5%	1/16W
R515	1-216-837-11	METAL CHIP	22K	5%	1/16W
R516	1-216-839-11	METAL CHIP	33K	5%	1/16W
R517	1-216-834-11	METAL CHIP	12K	5%	1/16W
R518	1-216-837-11	METAL CHIP	22K	5%	1/16W
R519	1-216-839-11	METAL CHIP	33K	5%	1/16W
R520	1-216-841-11	METAL CHIP	47K	5%	1/16W
R521	1-216-837-11	METAL CHIP	22K	5%	1/16W
R522	1-216-845-11	METAL CHIP	100K	5%	1/16W
R523	1-216-845-11	METAL CHIP	100K	5%	1/16W
R524	1-216-833-11	METAL CHIP	10K	5%	1/16W
R525	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W
R526	1-218-879-11	METAL GLAZE	22K	0 50%	1/16W (TRV62/TRV72/TRV82/TRV94)
R526	1-218-893-11	METAL GLAZE	82K	0 50%	1/16W (TRV54E/TRV56E/TRV64E/TRV94E)
R527	1-216-825-11	METAL CHIP	2 2K	5%	1/16W (TRV54E/TRV56E/TRV64E/TRV94E)
R527	1-218-891-11	METAL GLAZE	68K	0 50%	1/16W (TRV62/TRV72/TRV82/TRV94)
R528	1-216-845-11	METAL CHIP	100K	5%	1/16W
R529	1-216-857-11	METAL CHIP	1M	5%	1/16W
R533	1-216-857-11	METAL CHIP	1M	5%	1/16W (TRV62/TRV72/TRV82/TRV94/TRV94E)
R534	1-216-857-11	METAL CHIP	1M	5%	1/16W (TRV62/TRV72/TRV82/TRV94/TRV94E)
R536	1-216-845-11	METAL CHIP	100K	5%	1/16W
R537	1-216-845-11	METAL CHIP	100K	5%	1/16W
R538	1-216-851-11	METAL CHIP	330K	5%	1/16W
R539	1-216-857-11	METAL CHIP	1M	5%	1/16W
R540	1-216-797-11	METAL CHIP	10	5%	1/16W
R541	1-216-864-11	METAL CHIP	0	5%	1/16W
R542	1-216-821-11	METAL CHIP	1K	5%	1/16W
R543	1-216-296-91	CONDUCTOR, CHIP (3216)			
R550	1-216-857-11	METAL CHIP	1M	5%	1/16W
R551	1-216-845-11	METAL CHIP	100K	5%	1/16W

< TRANSFORMER >

⚠T501	1-426-938-21	TRANSFORMER, DC/DC CONVERTER

FP-249 FLEXIBLE BOARD
****
(Ref No 8,000 Series)

	1-658-214-11	FP-356 FLEXIBLE BOARD
	3-965-551-01	HOLDER (S), SENSOR
	3-965-552-01	HOLDER (T), SENSOR

< HALL ELEMENT >

H001	8-719-033-37	ELEMENT, HALL HW-105C
H002	8-719-033-37	ELEMENT, HALL HW-105C

< TRANSISTOR >

Ref No	Part No	Description	Remark
Q001	8-729-907-25	TRANSISTOR PT4850F	
Q002	8-729-907-25	TRANSISTOR PT4850F	

< SWITCH >

S001	1-692-614-11	SWITCH, PUSH (3 KEY) (Hi8 MP, ME/MP, REC PROOF)
S002	1-572-688-11	SWITCH, PUSH (1 KEY)(C C LOCK)

1-658-213-11 FP-355 FLEXIBLE BOARD
****
(Ref No 8,000 Series)

D001	8-719-988-42	DIODE GL453S

A-7073-096-A LB-50 BOARD, COMPLETE
****
(TRV72/TRV82/TRV94/TRV94E)
(Ref No 1,000 Series)

< CAPACITOR >

C801	1-104-917-11	TANTAL CHIP	15uF	20%	20V
C802	1-115-363-11	CERAMIC CHIP	10uF		10V
C803	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C804	1-163-020-00	CERAMIC CHIP	0 0082uF	10%	50V
C805	1-163-020-00	CERAMIC CHIP	0 0082uF	10%	50V
C806	1-163-020-00	CERAMIC CHIP	0 0082uF	10%	50V

< CONNECTOR >

* CN801	1-573-333-21	CONNECTOR, BOARD TO BOARD 10P

< COIL >

L801	1-412-030-11	INDUCTOR CHIP 22uH
L802	1-412-029-11	INDUCTOR CHIP 10uH

< FLUORECENT INDICATOR >

⚠ND801	1-517-414-21	FLUORESCENT TUBE (0 55 INCH)

< TRANSISTOR >

Q801	8-729-039-24	TRANSISTOR FX216-TL1

< RESISTOR >

R802	1-216-839-11	METAL CHIP	33K	5%	1/16W

< TRANSFORMER >

⚠T801	1-429-756-21	TRANSFORMER, INVERTER

A-7073-210-A MA-298 (VH25PE) BOARD, COMPLETE (TRV64E)
****
(Ref No 9,000 Series)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety Replace only with part number specified	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité Ne les remplacer que par une pièce portant le numéro spécifié

Ref No	Part No	Description			Remark
		< CAPACITOR >			
C303	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C305	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C306	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C307	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C308	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C309	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C310	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C311	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C312	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C314	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C315	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C316	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C317	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C318	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C319	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C320	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C321	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C322	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C323	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C324	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C325	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C326	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C327	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C328	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C329	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C330	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C331	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C332	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C333	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C334	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C335	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C336	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C337	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C338	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C339	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C340	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C341	1-164-346-11	CERAMIC CHIP	1MF		16V
C342	1-164-346-11	CERAMIC CHIP	1MF		16V
C343	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C345	1-135-259-11	TANTAL CHIP	10MF	20%	6.3V
C346	1-164-346-11	CERAMIC CHIP	1MF		16V
C347	1-135-259-11	TANTAL. CHIP	10MF	20%	6.3V
		< CONNECTOR >			
CN301	1-580-057-11	PIN, CONNECTOR 4P			
* CN303	1-764-523-11	CONNECTOR, FFC/FPC (ZIF) 14P			
		< DIODE >			
D303	8-719-404-49	DIODE MA111			
D304	8-719-061-82	DIODE TLSU1002 (TPX1,SONY)			
		< IC >			
IC301	8-759-248-31	IC BA7780KV-E2			
IC302	8-749-012-83	IC RS-180-T			

Ref No	Part No	Description			Remark
		< JACK >			
J301	1-691-737-11	JACK, SMALL TYPE (MIC)			
		< RESISTOR >			
R301	1-216-864-11	CONDUCTOR, CHIP (1608)			
R302	1-216-864-11	CONDUCTOR, CHIP (1608)			
R303	1-216-864-11	CONDUCTOR, CHIP (1608)			
R306	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R307	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R308	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R309	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R310	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R311	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R312	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R313	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R314	1-216-821-11	METAL CHIP	1K	5%	1/16W
R315	1-216-821-11	METAL CHIP	1K	5%	1/16W
R316	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R317	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W
R319	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R320	1-216-837-11	METAL CHIP	22K	5%	1/16W
R321	1-216-864-11	METAL CHIP	0	5%	1/16W
R322	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R323	1-216-833-11	METAL CHIP	10K	5%	1/16W
R324	1-216-837-11	METAL CHIP	22K	5%	1/16W
R325	1-216-864-11	METAL CHIP	0	5%	1/16W
R326	1-216-837-11	METAL CHIP	22K	5%	1/16W
R327	1-216-837-11	METAL CHIP	22K	5%	1/16W
R328	1-216-839-11	METAL CHIP	33K	5%	1/16W
R329	1-216-839-11	METAL CHIP	33K	5%	1/16W
R330	1-216-835-11	METAL CHIP	15K	5%	1/16W
R331	1-216-835-11	METAL CHIP	15K	5%	1/16W
R332	1-216-835-11	METAL CHIP	15K	5%	1/16W
R333	1-216-835-11	METAL CHIP	15K	5%	1/16W
R334	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R336	1-216-839-11	METAL CHIP	33K	5%	1/16W
R337	1-216-834-11	METAL CHIP	12K	5%	1/16W
R339	1-216-839-11	METAL CHIP	33K	5%	1/16W
R341	1-216-818-11	METAL CHIP	560	5%	1/16W
R342	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R343	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R345	1-216-805-11	METAL CHIP	47	5%	1/16W

A-7073-093-A MI-27 (VHCRJ) BOARD, COMPLETE (TRV82)
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A-7073-237-A MI-27 (VHCR) BOARD, COMPLETE (TRV94)
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(Ref No 4,000 Series)

Ref No	Part No	Description			Remark
		< CAPACITOR >			
C303	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C305	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C306	1-162-927-11	CERAMIC CHIP	100PF	5%	50V

Ref No	Part No	Description			Remark
C307	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C308	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C309	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C310	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C311	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C312	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C313	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C314	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C315	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C316	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C317	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C318	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C319	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C320	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C321	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C322	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C323	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C324	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C325	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C326	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C327	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C328	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C329	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C330	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C331	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C332	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C333	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C334	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C335	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C336	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C337	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C338	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C339	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C340	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C341	1-164-346-11	CERAMIC CHIP	1uF		16V
C342	1-164-346-11	CERAMIC CHIP	1uF		16V
C343	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C345	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C346	1-164-346-11	CERAMIC CHIP	1uF		16V
C347	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C361	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (TRV82)
C362	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V (TRV82)
C363	1-135-201-11	TANTALUM CHIP	10uF	20%	4V (TRV82)
C365	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V (TRV82)
C366	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (TRV82)
C367	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (TRV82)
C368	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (TRV82)
C369	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (TRV82)
C370	1-135-201-11	TANTALUM CHIP	10uF	20%	4V (TRV82)

Ref No	Part No	Description			Remark
C371	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V (TRV82)
C372	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (TRV82)
C373	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V (TRV82)
C374	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (TRV82)
C375	1-164-668-11	CERAMIC CHIP	510PF	5%	50V (TRV82)
C376	1-135-091-00	TANTALUM CHIP	1uF	20%	16V (TRV82)
C377	1-162-909-11	CERAMIC CHIP	4PF	0.25PF	50V (TRV82)
C378	1-135-091-00	TANTALUM CHIP	1uF	20%	16V (TRV82)
C379	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (TRV82)
C380	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (TRV82)
C381	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (TRV82)
C382	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V (TRV82)
C383	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (TRV82)
C385	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (TRV82)
C386	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (TRV82)
C387	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V (TRV82)
C388	1-104-908-11	TANTAL CHIP	47uF	20%	4V (TRV82)
C389	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V (TRV82)
C390	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V (TRV82)
C391	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (TRV82)
C392	1-162-947-11	CERAMIC CHIP	33PF	5%	50V (TRV82)
C393	1-162-922-11	CERAMIC CHIP	39PF	5%	50V (TRV82)
C395	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (TRV82)
C396	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (TRV82)
		< CONNECTOR >			
* CN301	1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P			
* CN302	1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P			
CN303	1-764-532-21	CONNECTOR, FFC/FPC (ZIF) 26P			
		< DIODE >			
D303	8-719-404-49	DIODE MA111			
D304	8-719-061-82	DIODE TLSU1002 (TPX1,SONY)			
D362	8-749-060-65	DIODE DCC3810 (TRV82)			
D363	8-719-061-86	DIODE DCR2810 (TRV82)			

Ref. No.	Part No.	Description			Remark
		< FUSE >			
⚠F361	1-533-844-11	FUSE, MICRO 200mA 63V (PU200)(TRV82)			
		< IC >			
IC301	8-759-248-31	IC BA7780KV-E2			
IC302	8-749-012-83	IC RS-180-T			
IC361	8-759-455-09	IC LA9510W-TBM (TRV82)			
		< JACK >			
J301	1-691-737-11	JACK, SMALL TYPE (MIC)			
		< COIL >			
L362	1-412-948-11	INDUCTOR	5 6uH (TRV82)		
L363	1-414-078-11	INDUCTOR	10uH (TRV82)		
L364	1-412-957-11	INDUCTOR	33uH (TRV82)		
L365	1-412-957-11	INDUCTOR	33uH (TRV82)		
		< TRANSISTOR >			
Q362	8-729-122-63	TRANSISTOR	2SA1226 (TRV82)		
Q364	8-729-425-50	TRANSISTOR	2SB1462Q (TRV82)		
Q365	8-729-140-75	TRANSISTOR	2SD999-CLCK (TRV82)		
		< RESISTOR >			
R301	1-216-864-11	CONDUCTOR, CHIP (1608)			
R302	1-216-864-11	CONDUCTOR, CHIP (1608)			
R303	1-216-864-11	CONDUCTOR, CHIP (1608)			
R306	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R307	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R308	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R309	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R310	1-216-825-11	METAL GLAZE	2 2K	5%	1/16W
R311	1-216-825-11	METAL GLAZE	2 2K	5%	1/16W
R312	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R313	1-216-831-11	METAL CHIP	6 8K	5%	1/16W
R314	1-216-821-11	METAL CHIP	1K	5%	1/16W
R315	1-216-821-11	METAL CHIP	1K	5%	1/16W
R316	1-216-832-11	METAL CHIP	8 2K	5%	1/16W
R317	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W
R319	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R320	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R321	1-216-864-11	METAL CHIP	0	5%	1/16W
R322	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R323	1-216-833-11	METAL CHIP	10K	5%	1/16W
R324	1-216-835-11	METAL CHIP	15K	5%	1/16W
R325	1-216-864-11	METAL CHIP	0	5%	1/16W
R326	1-216-831-11	METAL CHIP	6 8K	5%	1/16W
R327	1-216-835-11	METAL CHIP	15K	5%	1/16W
R328	1-216-839-11	METAL CHIP	33K	5%	1/16W
R329	1-216-839-11	METAL CHIP	33K	5%	1/16W
R330	1-216-835-11	METAL CHIP	15K	5%	1/16W
R331	1-216-835-11	METAL CHIP	15K	5%	1/16W
R332	1-216-835-11	METAL CHIP	15K	5%	1/16W
R333	1-216-835-11	METAL CHIP	15K	5%	1/16W
R334	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R336	1-216-839-11	METAL CHIP	33K	5%	1/16W

Ref No	Part No	Description			Remark
R337	1-216-834-11	METAL CHIP	12K	5%	1/16W
R339	1-216-839-11	METAL CHIP	33K	5%	1/16W
R341	1-216-818-11	METAL CHIP	560	5%	1/16W
R342	1-216-832-11	METAL CHIP	8 2K	5%	1/16W
R343	1-216-824-11	METAL CHIP	1 8K	5%	1/16W
R345	1-216-805-11	METAL CHIP	47	5%	1/16W
R361	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV82)
R363	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV82)
R365	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV82)
R366	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV82)
R367	1-216-853-11	METAL CHIP	470K	5%	1/16W (TRV82)
R369	1-218-879-11	METAL GLAZE	22K	0 50%	1/16W (TRV82)
R370	1-216-815-11	METAL CHIP	330	5%	1/16W (TRV82)
R371	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV82)
R373	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV82)
R375	1-216-818-11	METAL CHIP	560	5%	1/16W (TRV82)
R376	1-216-831-11	METAL CHIP	6 8K	5%	1/16W (TRV82)
R377	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV82)
R378	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV82)
R382	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV82)
R384	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV82)
R385	1-216-823-11	METAL CHIP	1 5K	5%	1/16W (TRV82)
R386	1-216-829-11	METAL CHIP	4 7K	5%	1/16W (TRV82)
R387	1-216-837-11	METAL CHIP	22K	5%	1/16W (TRV82)
R389	1-216-311-00	METAL CHIP	6 8	5%	1/10W (TRV82)
R390	1-216-829-11	METAL CHIP	4 7K	5%	1/16W (TRV82)
R392	1-216-847-11	METAL CHIP	150K	5%	1/16W (TRV82)
R393	1-216-847-11	METAL CHIP	150K	5%	1/16W (TRV82)
R397	1-216-864-11	METAL CHIP	0	5%	1/16W (TRV82)
R398	1-216-302-00	METAL CHIP	2 7	5%	1/10W (TRV82)
R399	1-216-864-11	METAL CHIP	0	5%	1/16W (TRV82)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité Ne les remplacer que par une pièce portant le numéro spécifié

Ref. No	Part No.	Description				Remark
	A-7073-118-A	MI-28 (VHCRP) BOARD, COMPLETE ****************************				
						(TRV54E/TRV56E/TRV94E)
	A-7073-225-A	MI-28 (VH35) BOARD, COMPLETE ****************************				
						(TRV62/TRV72) (Ref No 8,000 Series)
		< CAPACITOR >				
C303	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	
C304	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C305	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C306	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C307	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V	
C308	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V	
C309	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C310	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C311	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C312	1-164-677-11	CERAMIC CHIP	0 033uF	10%	16V	
C313	1-164-677-11	CERAMIC CHIP	0 033uF	10%	16V	
C314	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V	
C315	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V	
C316	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C317	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V	
C318	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V	
C319	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C320	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C321	1-110-563-11	CERAMIC CHIP	0 068uF	10%	16V	
C322	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	
C323	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	
C324	1-110-563-11	CERAMIC CHIP	0 068uF	10%	16V	
C325	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C326	1-164-245-11	CERAMIC CHIP	0 015uF	10%	25V	
C327	1-162-966-11	CERAMIC CHIP	0 0022uF	10%	50V	
C328	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C329	1-162-966-11	CERAMIC CHIP	0 0022uF	10%	50V	
C330	1-164-245-11	CERAMIC CHIP	0 015uF	10%	25V	
C331	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C332	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C333	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C334	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C335	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C336	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V	
C337	1-164-245-11	CERAMIC CHIP	0 015uF	10%	25V	
C338	1-164-245-11	CERAMIC CHIP	0 015uF	10%	25V	
C339	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	
C340	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	
C341	1-164-346-11	CERAMIC CHIP	1uF		16V	
C342	1-164-346-11	CERAMIC CHIP	1uF		16V	
C343	1-164-156-11	CERAMIC CHIP	0 1uF		25V	
C345	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V	
C346	1-164-346-11	CERAMIC CHIP	1uF		16V	
C347	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V	
C361	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	(TRV62/TRV72)
C362	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V	(TRV62/TRV72)

Ref No	Part No	Description				Remark
C363	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	(TRV62/TRV72)
C365	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V	(TRV62/TRV72)
C366	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	(TRV62/TRV72)
C367	1-115-467-11	CERAMIC CHIP	0 22uF	10%	10V	(TRV62/TRV72)
C368	1-115-467-11	CERAMIC CHIP	0 22uF	10%	10V	(TRV62/TRV72)
C369	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	(TRV62/TRV72)
C370	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	(TRV62/TRV72)
C371	1-135-151-21	TANTALUM CHIP	4 7uF	20%	4V	(TRV62/TRV72)
C372	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	(TRV62/TRV72)
C373	1-135-181-21	TANTALUM CHIP	4 7uF	20%	6 3V	(TRV62/TRV72)
C374	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	(TRV62/TRV72)
C375	1-164-668-11	CERAMIC CHIP	510PF	5%	50V	(TRV62/TRV72)
C376	1-135-091-00	TANTALUM CHIP	1uF	20%	16V	(TRV62/TRV72)
C377	1-162-909-11	CERAMIC CHIP	4PF	0 25PF	50V	(TRV62/TRV72)
C378	1-135-091-00	TANTALUM CHIP	1uF	20%	16V	(TRV62/TRV72)
C379	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	(TRV62/TRV72)
C380	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	(TRV62/TRV72)
C381	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	(TRV62/TRV72)
C382	1-135-181-21	TANTALUM CHIP	4 7uF	20%	6 3V	(TRV62/TRV72)
C383	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	(TRV62/TRV72)
C385	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	(TRV62/TRV72)
C386	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	(TRV62/TRV72)
C387	1-107-823-11	CERAMIC CHIP	0 47uF	10%	16V	(TRV62/TRV72)
C388	1-104-908-11	TANTAL CHIP	47uF	20%	4V	(TRV62/TRV72)
C389	1-135-145-11	TANTALUM CHIP	0 47uF	10%	35V	(TRV62/TRV72)
C390	1-135-145-11	TANTALUM CHIP	0 47uF	10%	35V	(TRV62/TRV72)
C391	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	(TRV62/TRV72)
C392	1-162-947-11	CERAMIC CHIP	33PF	5%	50V	(TRV62/TRV72)
C393	1-162-922-11	CERAMIC CHIP	39PF	5%	50V	(TRV62/TRV72)
C395	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	(TRV62/TRV72)
C396	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	(TRV62/TRV72)

MI-28

Ref No	Part No.	Description			Remark
		< CONNECTOR >			
* CN301	1-695-320-21	PIN, CONNECTOR (1 5MM) (SMD) 2P			
* CN302	1-695-320-21	PIN, CONNECTOR (1 5MM) (SMD) 2P			
CN303	1-764-532-21	CONNECTOR, FFC/FPC (ZIF) 26P			
		< DIODE >			
D303	8-719-404-49	DIODE MA111			
D304	8-719-061-82	DIODE TLSU1002(TPX1,SONY)			
D362	8-749-060-65	DIODE DCC3810 (TRV62/TRV72)			
D363	8-719-061-86	DIODE DCR2810 (TRV62/TRV72)			
		< FUSE >			
⚠F361	1-533-844-11	FUSE, MICRO 200mA 63V (PU200) (TRV62/TRV72)			
		< IC >			
IC301	8-759-248-31	IC BA7780KV-E2			
IC302	8-749-012-83	IC RS-180-T			
IC361	8-759-455-09	IC LA9510W-TBM (TRV62/TRV72)			
		< JACK >			
J301	1-691-737-11	JACK, SMALL TYPE (MIC)			
		< COIL >			
L362	1-412-948-11	INDUCTOR	5 6uH (TRV62/TRV72)		
L363	1-414-078-11	INDUCTOR	10uH (TRV62/TRV72)		
L364	1-412-957-11	INDUCTOR	33uH (TRV62/TRV72)		
L365	1-412-957-11	INDUCTOR	33uH (TRV62/TRV72)		
		< TRANSISTOR >			
Q362	8-729-122-63	TRANSISTOR 2SA1226 (TRV62/TRV72)			
Q364	8-729-425-50	TRANSISTOR 2SB1462Q (TRV62/TRV72)			
Q365	8-729-140-75	TRANSISTOR 2SD999-CLCK (TRV62/TRV72)			
		< RESISTOR >			
R301	1-216-864-11	CONDUCTOR, CHIP (1608)			
R302	1-216-864-11	CONDUCTOR, CHIP (1608)			
R303	1-216-864-11	CONDUCTOR, CHIP (1608)			
R306	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R307	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R308	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R309	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R310	1-216-825-11	METAL GLAZE	2 2K	5%	1/16W
R311	1-216-825-11	METAL GLAZE	2 2K	5%	1/16W
R312	1-216-831-11	METAL CHIP	6 8K	5%	1/16W
R313	1-216-831-11	METAL CHIP	6 8K	5%	1/16W
R314	1-216-821-11	METAL CHIP	1K	5%	1/16W
R315	1-216-821-11	METAL CHIP	1K	5%	1/16W
R316	1-216-832-11	METAL CHIP	8 2K	5%	1/16W
R317	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W
R319	1-216-832-11	METAL CHIP	8 2K	5%	1/16W
R320	1-216-831-11	METAL CHIP	6 8K	5%	1/16W
R321	1-216-864-11	METAL CHIP	0	5%	1/16W
R322	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R323	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref No	Part No	Description			Remark
R324	1-216-835-11	METAL CHIP	15K	5%	1/16W
R325	1-216-864-11	METAL CHIP	0	5%	1/16W
R326	1-216-831-11	METAL CHIP	6 8K	5%	1/16W
R327	1-216-835-11	METAL CHIP	15K	5%	1/16W
R328	1-216-839-11	METAL CHIP	33K	5%	1/16W
R329	1-216-839-11	METAL CHIP	33K	5%	1/16W
R330	1-216-835-11	METAL CHIP	15K	5%	1/16W
R331	1-216-835-11	METAL CHIP	15K	5%	1/16W
R332	1-216-835-11	METAL CHIP	15K	5%	1/16W
R333	1-216-835-11	METAL CHIP	15K	5%	1/16W
R334	1-216-830-11	METAL CHIP	5 6K	5%	1/16W
R336	1-216-839-11	METAL CHIP	33K	5%	1/16W
R337	1-216-834-11	METAL CHIP	12K	5%	1/16W
R339	1-216-839-11	METAL CHIP	33K	5%	1/16W
R341	1-216-818-11	METAL CHIP	560	5%	1/16W
R342	1-216-832-11	METAL CHIP	8 2K	5%	1/16W
R343	1-216-824-11	METAL CHIP	1 8K	5%	1/16W
R345	1-216-805-11	METAL CHIP	47	5%	1/16W
R361	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV62/TRV72)
R363	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV62/TRV72)
R365	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV62/TRV72)
R366	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV62/TRV72)
R367	1-216-853-11	METAL CHIP	470K	5%	1/16W (TRV62/TRV72)
R369	1-218-879-11	METAL GLAZE	22K	0 50%	1/16W (TRV62/TRV72)
R370	1-216-815-11	METAL CHIP	330	5%	1/16W (TRV62/TRV72)
R371	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV62/TRV72)
R373	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV62/TRV72)
R375	1-216-818-11	METAL CHIP	560	5%	1/16W (TRV62/TRV72)
R376	1-216-831-11	METAL CHIP	6 8K	5%	1/16W (TRV62/TRV72)
R377	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV62/TRV72)
R378	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV62/TRV72)
R382	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV62/TRV72)
R384	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV62/TRV72)
R385	1-216-823-11	METAL CHIP	1 5K	5%	1/16W (TRV62/TRV72)
R386	1-216-829-11	METAL CHIP	4 7K	5%	1/16W (TRV62/TRV72)
R387	1-216-837-11	METAL CHIP	22K	5%	1/16W (TRV62/TRV72)
R389	1-216-311-00	METAL CHIP	6 8	5%	1/10W (TRV62/TRV72)
R390	1-216-829-11	METAL CHIP	4 7K	5%	1/16W (TRV62/TRV72)
R392	1-216-847-11	METAL CHIP	150K	5%	1/16W (TRV62/TRV72)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité Ne les remplacer que par une pièce portant le numéro spécifié

Ref No.	Part No.	Description	Remark
R393	1-216-847-11	METAL CHIP 150K 5% 1/16W	(TRV62/TRV72)
R397	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV62/TRV72)
R398	1-216-302-00	METAL CHIP 2 7 5% 1/10W	(TRV62/TRV72)
R399	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV62/TRV72)
	A-7073-098-A	MM-35 (VHCRJ) BOARD, COMPLETE ******************************	(TRV94/TRV94E)
	A-7073-174-A	MM-35 (HCI) BOARD, COMPLETE ****************************	(EXCEPT TRV54E/TRV94/TRV94E)
	A-7073-230-A	MM-35 (VMR35PE) BOARD, COMPLETE **********************************	(TRV54E) (Ref No 2,000 Series)
		< CAPACITOR >	
C701	1-135-259-11	TANTAL CHIP 10uF 20% 6 3V	(TRV94/TRV94E)
C702	1-162-970-11	CERAMIC CHIP 0 01uF 10% 25V	(TRV94/TRV94E)
C703	1-162-970-11	CERAMIC CHIP 0 01uF 10% 25V	(TRV94/TRV94E)
C704	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	(TRV94/TRV94E)
C705	1-162-970-11	CERAMIC CHIP 0 01uF 10% 25V	(TRV94/TRV94E)
C706	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	(TRV94/TRV94E)
C707	1-162-915-11	CERAMIC CHIP 10PF 0 5PF 50V	(TRV94/TRV94E)
C708	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	(TRV94/TRV94E)
C709	1-164-156-11	CERAMIC CHIP 0 1uF 25V	(TRV94/TRV94E)
C710	1-135-201-11	TANTALUM CHIP 10uF 20% 4V	(TRV94/TRV94E)
C711	1-162-970-11	CERAMIC CHIP 0 01uF 10% 25V	(TRV94/TRV94E)
C712	1-162-970-11	CERAMIC CHIP 0 01uF 10% 25V	(TRV94/TRV94E)
C713	1-164-004-11	CERAMIC CHIP 0 1uF 10% 25V	(TRV94/TRV94E)
C714	1-162-964-11	CERAMIC CHIP 0 001uF 10% 50V	(TRV94/TRV94E)
C715	1-164-156-11	CERAMIC CHIP 0 1uF 25V	(TRV94/TRV94E)
C716	1-164-156-11	CERAMIC CHIP 0 1uF 25V	(TRV54E/TRV94/TRV94E)
C717	1-135-201-11	TANTALUM CHIP 10uF 20% 4V	(TRV54E/TRV94/TRV94E)
C719	1-162-970-11	CERAMIC CHIP 0 01uF 10% 25V	(TRV94/TRV94E)
C720	1-135-201-11	TANTALUM CHIP 10uF 20% 4V	(TRV94/TRV94E)

Ref No	Part No	Description	Remark
		< CONNECTOR >	
CN701	1-778-080-11	CONNECTOR, BOARD TO BOARD 70P	(TRV54E/TRV94/TRV94E)
CN702	1-766-677-21	CONNECTOR, FFC/FPC 16P	
CN703	1-764-709-11	CONNECTOR, FFC/FPC 10P	
CN704	1-766-342-21	CONNECTOR, FFC/FPC 12P	
		< DIODE >	
D701	8-719-062-16	DIODE 01ZA8 2(TPL3)	
D702	8-719-062-16	DIODE 01ZA8 2(TPL3)	
D703	8-719-062-16	DIODE 01ZA8 2(TPL3)	
D705	8-719-062-16	DIODE 01ZA8 2(TPL3)	
D706	8-719-062-16	DIODE 01ZA8 2(TPL3)	
		< FERRITE BEAD >	
FB702	1-414-228-11	INDUCTOR, FERRITE BEAD	
FB711	1-414-228-11	INDUCTOR, FERRITE BEAD	
FB712	1-414-228-11	INDUCTOR, FERRITE BEAD	
FB713	1-414-228-11	INDUCTOR, FERRITE BEAD	
		< IC >	
IC701	8-759-421-52	IC MB87B110CPFV-G-BND-ER	(TRV94/TRV94E)
IC702	8-759-458-00	IC ZA4035HR	(TRV54E/TRV94/TRV94E)
IC704	8-759-445-65	IC F432165PZ-TEB	(TRV54E/TRV94/TRV94E)
		< COIL >	
L701	1-414-754-11	INDUCTOR 10uH	(TRV94/TRV94E)
L702	1-412-950-11	INDUCTOR 8 2uH	(TRV94/TRV94E)
L703	1-414-754-11	INDUCTOR 10uH	(TRV94/TRV94E)
L704	1-414-754-11	INDUCTOR 10uH	(TRV94/TRV94E)
L705	1-410-658-31	INDUCTOR CHIP 220uH	(TRV94/TRV94E)
		< TRANSISTOR >	
Q701	8-729-425-64	TRANSISTOR 2SD2216Q	(TRV94/TRV94E)
Q702	8-729-425-64	TRANSISTOR 2SD2216Q	(TRV94/TRV94E)
Q703	8-729-425-64	TRANSISTOR 2SD2216Q	(TRV94/TRV94E)
Q704	8-729-037-59	TRANSISTOR UN9111J-(TX) SO	(TRV94/TRV94E)
Q705	8-729-425-64	TRANSISTOR 2SD2216Q	(TRV94/TRV94E)
Q706	8-729-429-18	TRANSISTOR UN9213	
Q707	8-729-425-50	TRANSISTOR 2SB1462Q	
		< RESISTOR >	
R701	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV94/TRV94E)
R702	1-216-838-11	METAL CHIP 27K 5% 1/16W	(TRV94/TRV94E)
R703	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV94/TRV94E)
R704	1-216-819-11	METAL CHIP 680 5% 1/16W	(TRV94/TRV94E)
R705	1-216-812-11	METAL CHIP 180 5% 1/16W	(TRV94/TRV94E)
R706	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV94/TRV94E)
R707	1-216-824-11	METAL CHIP 1 8K 5% 1/16W	(TRV94/TRV94E)
R708	1-216-816-11	METAL CHIP 390 5% 1/16W	(TRV94/TRV94E)

Ref No	Part No	Description				Remark
R709	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV94/TRV94E)
R710	1-216-826-11	METAL CHIP	2 7K	5%	1/16W	(TRV94/TRV94E)
R711	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV94/TRV94E)
R712	1-216-826-11	METAL CHIP	2 7K	5%	1/16W	(TRV94/TRV94E)
R713	1-216-825-11	METAL CHIP	2 2K	5%	1/16W	(TRV94/TRV94E)
R714	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV94/TRV94E)
R715	1-216-829-11	METAL CHIP	4 7K	5%	1/16W	(TRV94/TRV94E)
R716	1-216-819-11	METAL CHIP	680	5%	1/16W	(TRV94/TRV94E)
R719	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV94/TRV94E)
R720	1-216-816-11	METAL CHIP	390	5%	1/16W	(TRV94/TRV94E)
R721	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV94/TRV94E)
R722	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV94/TRV94E)
R723	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV94/TRV94E)
R724	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV94/TRV94E)
R725	1-216-829-11	METAL CHIP	4 7K	5%	1/16W	(TRV94/TRV94E)
R726	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV94/TRV94E)
R727	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV94/TRV94E)
R743	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R744	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R745	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R746	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R747	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R748	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R749	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R750	1-216-819-11	METAL CHIP	680	5%	1/16W	
R751	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R755	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R756	1-216-864-11	METAL CHIP	0	5%	1/16W	

A-7093-198-A PC-65 (C25PE) BOARD, COMPLETE
****
(TRV64E:AEP,EE,NE,RU,UK)

A-7093-203-A PC-65 (C25CN) BOARD, COMPLETE(TRV64E CH)
****
(Ref No 40,000 Series)

< CAPACITOR >

Ref No	Part No	Description				Remark
C1802	1-162-924-11	CERAMIC CHIP	56PF	5%	50V	
C1804	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	(TRV64E AEP,EE,NE,RU,UK)
C1806	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V	
C1808	1-162-969-11	CERAMIC CHIP	0 0068uF	10%	25V	
C1810	1-107-685-11	TANTAL CHIP	15uF	20%	6 3V	
C1811	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1812	1-104-912-11	TANTAL CHIP	3 3uF	20%	6 3V	
C1813	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C1814	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1816	1-162-963-11	CERAMIC CHIP	680PF	10%	50V	
C1820	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1822	1-165-176-11	CERAMIC CHIP	0 047uF	10%	16V	
C1823	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1825	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1826	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1827	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1828	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1829	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	
C1832	1-162-922-11	CERAMIC CHIP	39PF	5%	50V	
C1835	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V	
C1836	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V	
C1837	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V	
C1838	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1839	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1840	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C1841	1-135-214-21	TANTAL CHIP	4 7uF	20%	20V	
C1842	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V	
C1844	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	(TRV64E AEP,EE,NE,RU,UK)
C1845	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	(TRV64E CH)
C1846	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V	

< CONNECTOR >

CN1801	1-779-065-11	PIN, CONNECTOR (PC BOARD) 13P
CN1802	1-774-646-21	CONNECTOR, FFC/FPC 24P
CN1991	1-766-350-21	CONNECTOR, FFC/EPC (ZIF) 20P

< DIODE >

D1801	8-713-102-80	DIODE 1T369-01-T8A

< IC >

IC1801	8-752-070-03	IC CXA1785AR-T4
IC1802	8-759-364-05	IC M62376GP-65AD
IC1803	8-759-079-52	IC TC74VHC08FS(EL)
IC1805	8-759-082-60	IC TC7S66FU(TE85R)
IC1991	8-759-465-98	IC BU9728AKV-E2

< COIL >

L1801	1-412-963-11	INDUCTOR	100uH	
L1802	1-412-960-21	INDUCTOR	56uH	
L1803	1-414-755-11	INDUCTOR	22uH	
L1804	1-412-956-21	INDUCTOR	27uH	
L1805	1-414-078-11	INDUCTOR	10uH	
L1806	1-412-960-21	INDUCTOR	56uH	(TRV64E AEP,EE,NE,RU,UK)

< TRANSISTOR >

Q1801	8-729-425-64	TRANSISTOR 2SD2216Q
Q1802	8-729-425-50	TRANSISTOR 2SB1462Q
Q1804	8-729-429-18	TRANSISTOR UN9213
Q1805	8-729-425-64	TRANSISTOR 2SD2216Q

Ref No.	Part No	Description			Remark
Q1806	8-729-429-18	TRANSISTOR	UN9213		
Q1807	8-729-429-18	TRANSISTOR	UN9213		
Q1808	8-729-429-18	TRANSISTOR	UN9213		
					(TRV64E AEP,EE,NE,RU,UK)
Q1809	8-729-429-18	TRANSISTOR	UN9213		
					(TRV64E AEP,EE,NE,RU,UK)
Q1810	8-729-429-18	TRANSISTOR	UN9213		
					(TRV64E AEP,EE,NE,RU,UK)
		< RESISTOR >			
R1802	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R1803	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R1804	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1805	1-216-817-11	METAL CHIP	470	5%	1/16W
R1806	1-216-827-11	METAL CHIP	3 3K	5%	1/16W
R1807	1-216-817-11	METAL CHIP	470	5%	1/16W
R1808	1-216-842-11	METAL CHIP	56K	5%	1/16W
R1810	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1811	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R1812	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1813	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1814	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W
R1815	1-216-844-11	METAL CHIP	82K	5%	1/16W
R1816	1-216-851-11	METAL CHIP	330K	5%	1/16W
R1817	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1818	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1819	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1820	1-216-864-11	METAL CHIP	0	5%	1/16W
R1822	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1823	1-216-864-11	METAL CHIP	0	5%	1/16W
R1825	1-219-570-11	METAL GLAZE	10M	5%	1/16W
R1826	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1827	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1828	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1829	1-216-840-11	METAL CHIP	39K	5%	1/16W
R1830	1-216-839-11	METAL CHIP	33K	5%	1/16W
R1831	1-216-840-11	METAL CHIP	39K	5%	1/16W
					(TRV64E AEP,UK)
R1832	1-216-836-11	METAL CHIP	18K	5%	1/16W
R1833	1-216-840-11	METAL CHIP	39K	5%	1/16W
R1834	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1835	1-216-839-11	METAL CHIP	33K	5%	1/16W
R1836	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1837	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1838	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1839	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1840	1-216-830-11	METAL CHIP	5 6K	5%	1/16W
R1841	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1842	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1843	1-216-817-11	METAL CHIP	470	5%	1/16W
R1844	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1846	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1847	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1848	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R1849	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1852	1-216-864-11	METAL CHIP	0	5%	1/16W
R1853	1-216-805-11	METAL CHIP	47	5%	1/16W
R1854	1-216-805-11	METAL CHIP	47	5%	1/16W

Ref No	Part No	Description			Remark
R1855	1-216-805-11	METAL CHIP	47	5%	1/16W
R1856	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W
R1857	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W
R1858	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1859	1-216-838-11	METAL CHIP	27K	5%	1/16W
R1860	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1861	1-218-885-11	METAL GLAZE	39K	0 50%	1/16W
R1863	1-218-885-11	METAL GLAZE	39K	0 50%	1/16W
R1864	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(TRV64E AEP,EE,NE,RU,UK)
R1865	1-216-864-11	METAL CHIP	0	5%	1/16W
R1991	1-216-855-11	METAL CHIP	680K	5%	1/16W
		< VIBRATOR >			
X1801	1-579-661-21	OSCILLATOR, CRYSTAL (4 43619MHz)			

A-7093-185-A PD-78 (S4R) BOARD, COMPLETE (TRV94)
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A-7093-236-A PD-78 (S4) BOARD, COMPLETE (TRV82)
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(Ref No 4,000 Series)

Ref No	Part No	Description			Remark
		< CAPACITOR >			
C801	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C802	1-107-823-11	CERAMIC CHIP	0 47uF	10%	16V
C804	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C805	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C806	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C808	1-104-752-11	TANTAL CHIP	33uF	20%	6 3V
C810	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C811	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C812	1-104-912-11	TANTAL CHIP	3 3uF	20%	6 3V
C813	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C814	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C815	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C816	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C819	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C820	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C822	1-164-156-11	CERAMIC CHIP	0 1uF		25V
C823	1-163-809-11	CERAMIC CHIP	0 047uF	10%	25V
C824	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C826	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C831	1-162-913-11	CERAMIC CHIP	8PF	0 5PF	50V
C832	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C833	1-104-851-11	TANTAL CHIP	10uF	20%	10V
C834	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C835	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C836	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C837	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C838	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C839	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C841	1-107-823-11	CERAMIC CHIP	0 47uF	10%	16V
C842	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C901	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C903	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C904	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V

Ref No	Part No	Description			Remark
C905	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C907	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C908	1-107-687-11	TANTAL CHIP	3 3uF	20%	20V
C909	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C910	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C911	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C913	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C914	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C915	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C916	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C917	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C918	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C919	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C920	1-104-916-11	TANTAL CHIP	6 8uF	20%	20V
C921	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C922	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C923	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C924	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C951	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C952	1-164-218-11	CERAMIC CHIP	180PF	0 25PF	50V
C953	1-164-156-11	CERAMIC CHIP	0 1uF		25V
C954	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C955	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C956	1-162-966-11	CERAMIC CHIP	0 0022uF	10%	50V
C957	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V
C958	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C959	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C960	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C961	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C962	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C963	1-164-489-11	CERAMIC CHIP	0 22uF	10%	16V
C964	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C965	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C966	1-164-346-11	CERAMIC CHIP	1uF		16V
C967	1-104-911-11	TANTAL CHIP	33uF	20%	10V
C968	1-164-664-11	CERAMIC CHIP	0 033uF	10%	50V
C969	1-164-505-11	CERAMIC CHIP	2 2uF		16V
C970	1-164-505-11	CERAMIC CHIP	2 2uF		16V
C972	1-164-505-11	CERAMIC CHIP	2 2uF		16V
C973	1-164-505-11	CERAMIC CHIP	2 2uF		16V
C974	1-164-505-11	CERAMIC CHIP	2 2uF		16V
C975	1-164-505-11	CERAMIC CHIP	2 2uF		16V
C976	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
⚠C977	1-113-521-11	CERAMIC CHIP	12PF	10%	3KV
C978	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V
C979	1-164-156-11	CERAMIC CHIP	0 1uF		25V
		< CONNECTOR >			
CN801	1-779-065-11	PIN, CONNECTOR (PC BOARD) 13P			
* CN802	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN901	1-779-064-11	PIN, CONNECTOR (PC BOARD) 12P			
CN902	1-573-364-11	CONNECTOR, FFC/FPC 24P			
CN951	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN991	1-573-929-11	CONNECTOR, FFC/FPC (ZIF) 20P			

Ref No	Part No	Description	Remark
		< DIODE >	
D901	8-713-102-80	DIODE 1T369-01-T8A	
D902	8-713-102-80	DIODE 1T369-01-T8A	
D903	8-719-976-96	DIODE DTZ4 7C	
D951	8-719-989-33	DIODE FC806	
D952	8-719-941-86	DIODE DAN202U	
D953	8-719-404-49	DIODE MA111	
D954	8-719-404-49	DIODE MA111	
		< FERRITE BEAD >	
FB901	1-414-228-11	INDUCTOR, FERRITE BEAD	
		< IC >	
IC801	8-759-450-52	IC IR3Y29B4	
IC802	8-759-364-05	IC M62376GP-65AD	
IC803	8-759-079-52	IC TC74VHC08FS(EL)	
IC901	8-759-374-41	IC LZ95N944	
IC902	8-759-359-49	IC NJM3414AV(TE2)	
IC951	8-759-060-94	IC MB3785APFV-G-BND-ER	
IC991	8-759-073-95	IC SED1510FOC	
		< COIL >	
L801	1-412-963-11	INDUCTOR 100uH	
L802	1-412-962-11	INDUCTOR 82uH	
L803	1-414-755-11	INDUCTOR 22uH	
L805	1-414-754-11	INDUCTOR 10uH	
L901	1-414-754-11	INDUCTOR 10uH	
L902	1-414-754-11	INDUCTOR 10uH	
L903	1-414-754-11	INDUCTOR 10uH	
L904	1-412-951-11	INDUCTOR 10uH	
L951	1-412-056-11	INDUCTOR CHIP 4 7uH	
L952	1-414-398-11	INDUCTOR 10uH	
L953	1-424-674-11	COIL, CHOKE 22uH	
L954	1-409-536-41	COIL, CHOKE 150uH	
L955	1-414-757-11	INDUCTOR 100uH	
L956	1-414-757-11	INDUCTOR 100uH	
L957	1-414-757-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q801	8-729-425-64	TRANSISTOR 2SD2216Q	
Q802	8-729-425-50	TRANSISTOR 2SB1462Q	
Q803	8-729-425-64	TRANSISTOR 2SD2216Q	
Q804	8-729-429-18	TRANSISTOR UN9213 (TRV82)	
Q901	8-729-429-18	TRANSISTOR UN9213 (TRV82)	
Q902	8-729-428-88	TRANSISTOR UN9113 (TRV82)	
Q903	8-729-429-18	TRANSISTOR UN9213 (TRV82)	
Q904	8-729-425-64	TRANSISTOR 2SD2216Q	
Q905	8-729-425-50	TRANSISTOR 2SB1462Q	
Q951	8-729-429-18	TRANSISTOR UN9213	
Q952	8-729-429-18	TRANSISTOR UN9213	
Q953	8-729-041-23	TRANSISTOR NDS356AP	
Q954	8-729-425-50	TRANSISTOR 2SB1462Q	
Q955	8-729-823-84	TRANSISTOR FP102	
Q956	8-729-804-41	TRANSISTOR 2SB1122-S	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety Replace only with part number specified	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité Ne les remplacer que par une piéce portant le numéro spécifié

Ref No.	Part No	Description			Remark
Q957	8-729-039-43	TRANSISTOR	FP216-TL		
Q958	8-729-425-50	TRANSISTOR	2SB1462Q		
		< RESISTOR >			
R801	1-216-839-11	METAL CHIP	33K	5%	1/16W
R802	1-216-837-11	METAL CHIP	22K	5%	1/16W
R803	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R804	1-216-817-11	METAL CHIP	470	5%	1/16W
R805	1-216-821-11	METAL CHIP	1K	5%	1/16W
R806	1-216-817-11	METAL CHIP	470	5%	1/16W
R807	1-216-838-11	METAL CHIP	27K	5%	1/16W
R808	1-216-839-11	METAL CHIP	33K	5%	1/16W
R809	1-216-821-11	METAL CHIP	1K	5%	1/16W
R810	1-216-864-11	METAL CHIP	0	5%	1/16W
R811	1-216-821-11	METAL CHIP	1K	5%	1/16W
R812	1-216-821-11	METAL CHIP	1K	5%	1/16W
R813	1-216-821-11	METAL CHIP	1K	5%	1/16W
R814	1-216-821-11	METAL CHIP	1K	5%	1/16W
R815	1-216-818-11	METAL CHIP	560	5%	1/16W
R816	1-216-821-11	METAL CHIP	1K	5%	1/16W
R817	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R818	1-216-838-11	METAL CHIP	27K	5%	1/16W
R819	1-216-845-11	METAL CHIP	100K	5%	1/16W
R820	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W
R821	1-216-851-11	METAL CHIP	330K	5%	1/16W
R822	1-216-857-11	METAL CHIP	1M	5%	1/16W
R823	1-216-833-11	METAL CHIP	10K	5%	1/16W
R824	1-216-842-11	METAL CHIP	56K	5%	1/16W
R826	1-216-839-11	METAL CHIP	33K	5%	1/16W
R827	1-216-841-11	METAL CHIP	47K	5%	1/16W
R829	1-216-847-11	METAL CHIP	150K	5%	1/16W
R830	1-216-864-11	METAL CHIP	0	5%	1/16W
R832	1-216-838-11	METAL CHIP	27K	5%	1/16W
R833	1-216-834-11	METAL CHIP	12K	5%	1/16W
R834	1-216-864-11	METAL CHIP	0	5%	1/16W
R836	1-216-843-11	METAL CHIP	68K	5%	1/16W
R837	1-216-839-11	METAL CHIP	33K	5%	1/16W
R838	1-216-842-11	METAL CHIP	56K	5%	1/16W
R839	1-216-864-11	METAL CHIP	0	5%	1/16W
R840	1-216-857-11	METAL CHIP	1M	5%	1/16W
R842	1-216-837-11	METAL CHIP	22K	5%	1/16W
R843	1-216-839-11	METAL CHIP	33K	5%	1/16W
R844	1-216-857-11	METAL CHIP	1M	5%	1/16W (TRV82)
R846	1-216-836-11	METAL CHIP	18K	5%	1/16W
R847	1-216-839-11	METAL CHIP	33K	5%	1/16W
R848	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R851	1-216-805-11	METAL CHIP	47	5%	1/16W
R852	1-216-805-11	METAL CHIP	47	5%	1/16W
R853	1-216-805-11	METAL CHIP	47	5%	1/16W
R854	1-216-838-11	METAL CHIP	27K	5%	1/16W
R855	1-216-832-11	METAL CHIP	8 2K	5%	1/16W
R856	1-216-837-11	METAL CHIP	22K	5%	1/16W
R857	1-216-843-11	METAL CHIP	68K	5%	1/16W
R858	1-216-830-11	METAL CHIP	5 6K	5%	1/16W
R902	1-216-857-11	METAL CHIP	1M	5%	1/16W
R903	1-216-841-11	METAL CHIP	47K	5%	1/16W
R904	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref No	Part No	Description			Remark
R905	1-218-893-11	METAL GLAZE	82K	0 50%	1/16W
R906	1-216-843-11	METAL CHIP	68K	5%	1/16W
R907	1-216-847-11	METAL CHIP	150K	5%	1/16W
R908	1-216-845-11	METAL CHIP	100K	5%	1/16W
R909	1-216-842-11	METAL CHIP	56K	5%	1/16W
R910	1-216-837-11	METAL CHIP	22K	5%	1/16W
R911	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R912	1-216-833-11	METAL CHIP	10K	5%	1/16W
R913	1-216-833-11	METAL CHIP	10K	5%	1/16W
R914	1-216-833-11	METAL CHIP	10K	5%	1/16W
R915	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R916	1-216-837-11	METAL CHIP	22K	5%	1/16W
R917	1-216-833-11	METAL CHIP	10K	5%	1/16W
R919	1-216-857-11	METAL CHIP	1M	5%	1/16W
R920	1-216-857-11	METAL CHIP	1M	5%	1/16W
R921	1-216-843-11	METAL CHIP	68K	5%	1/16W
R922	1-216-837-11	METAL CHIP	22K	5%	1/16W
R923	1-216-843-11	METAL CHIP	68K	5%	1/16W
R924	1-216-841-11	METAL CHIP	47K	5%	1/16W
R925	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R926	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV82)
R927	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R928	1-216-833-11	METAL CHIP	10K	5%	1/16W
R929	1-216-841-11	METAL CHIP	47K	5%	1/16W
R930	1-216-839-11	METAL CHIP	33K	5%	1/16W
R931	1-216-845-11	METAL CHIP	100K	5%	1/16W
R932	1-216-842-11	METAL CHIP	56K	5%	1/16W
R933	1-216-850-11	METAL CHIP	270K	5%	1/16W
R934	1-218-883-11	METAL GLAZE	33K	0 50%	1/16W
R935	1-218-879-11	METAL GLAZE	22K	0 50%	1/16W
R936	1-216-841-11	METAL CHIP	47K	5%	1/16W
R937	1-218-883-11	METAL GLAZE	33K	0 50%	1/16W
R938	1-218-879-11	METAL GLAZE	22K	0 50%	1/16W
R939	1-218-879-11	METAL GLAZE	22K	0 50%	1/16W
R941	1-216-813-11	METAL CHIP	220	5%	1/16W
R942	1-216-864-11	METAL CHIP	0	5%	1/16W
R943	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV94)
R944	1-218-893-11	METAL GLAZE	82K	0 50%	1/16W
R951	1-216-833-11	METAL CHIP	10K	5%	1/16W
R952	1-216-840-11	METAL CHIP	39K	5%	1/16W
R953	1-216-833-11	METAL CHIP	10K	5%	1/16W
R954	1-218-887-11	METAL GLAZE	47K	0 50%	1/16W
R955	1-218-883-11	METAL GLAZE	33K	0 50%	1/16W
R956	1-216-857-11	METAL CHIP	1M	5%	1/16W
R957	1-216-857-11	METAL CHIP	1M	5%	1/16W
R958	1-216-845-11	METAL CHIP	100K	5%	1/16W
R959	1-218-871-11	METAL GLAZE	10K	0 50%	1/16W
R960	1-218-883-11	METAL GLAZE	33K	0 50%	1/16W
R961	1-216-864-11	METAL CHIP	0	5%	1/16W
R962	1-218-883-11	METAL GLAZE	33K	0 50%	1/16W
R963	1-218-871-11	METAL GLAZE	10K	0 50%	1/16W
R964	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W
R965	1-218-855-11	METAL GLAZE	2 2K	0 50%	1/16W
R966	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R967	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No	Part No	Description			Remark
R968	1-218-863-11	METAL GLAZE	4 7K	0 50%	1/16W
R969	1-216-833-11	METAL CHIP	10K	5%	1/16W
R970	1-216-851-11	METAL CHIP	330K	5%	1/16W
R971	1-216-857-11	METAL CHIP	1M	5%	1/16W
R972	1-216-853-11	METAL CHIP	470K	5%	1/16W
R973	1-216-851-11	METAL CHIP	330K	5%	1/16W
R974	1-216-817-11	METAL CHIP	470	5%	
R975	1-216-841-11	METAL CHIP	47K	5%	1/16W
R976	1-216-813-11	METAL CHIP	220	5%	1/16W
R977	1-216-055-00	METAL CHIP	1 8K	5%	1/10W
R978	1-216-055-00	METAL CHIP	1 8K	5%	1/10W
R979	1-216-810-11	METAL CHIP	120	5%	1/16W
R980	1-216-837-11	METAL CHIP	22K	5%	1/16W
R983	1-216-817-11	METAL CHIP	470	5%	1/16W
R987	1-216-864-11	METAL CHIP	0	5%	1/16W
R991	1-216-855-11	METAL CHIP	680K	5%	1/16W
R995	1-216-826-11	METAL CHIP	2 7K	5%	1/16W
R996	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R997	1-216-833-11	METAL CHIP	10K	5%	1/16W
R998	1-216-838-11	METAL CHIP	27K	5%	1/16W
R1803	1-216-829-11	METAL CHIP	4 7K	5%	1/16W

< SWITCH >

Ref. No	Part No	Description
S991	1-692-088-41	SWITCH, TACTILE (LCD BRIGHT +)
S992	1-692-088-41	SWITCH, TACTILE (LCD BRIGHT -)
S993	1-692-088-41	SWITCH, TACTILE (VOLUME +)
S994	1-692-088-41	SWITCH, TACTILE (VOLUME -)
S995	1-572-467-71	SWITCH, PUSH (1 KEY)(PANEL MIRROR)

< TRANSFORMER >

Ref. No	Part No	Description
⚠T951	1-431-291-21	TRANSFORMER, DC-DC CONVERTER
⚠T952	1-429-507-31	TRANSFORMER, INVERTER

< VIBRATOR >

Ref. No	Part No	Description
X801	1-579-466-11	VIBRATOR, CRYSTAL (3 579645MHz)

A-7093-191-A PD-80 (C4RP) BOARD, COMPLETE
****
(TRV94E.AEP,UK)

A-7093-210-A PD-80 (C35PE) BOARD, COMPLETE (TRV54E)
****

A-7093-212-A PD-80 (C35) BOARD, COMPLETE
****
(TRV62/TRV72)

A-7093-219-A PD-80 (C4PE) BOARD, COMPLETE (TRV56E)
****

A-7093-221-A PD-80 (C4RPE) BOARD, COMPLETE
****
(TRV94E E,HK,JE)
(Ref No. 20,000 Series)

< CAPACITOR >

Ref. No	Part No	Description			Remark
C1802	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C1803	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C1804	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
					(TRV94E AEP,UK)
C1806	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C1808	1-162-969-11	CERAMIC CHIP	0 0068uF	10%	25V
C1810	1-107-685-11	TANTAL CHIP	15uF	20%	6 3V
C1811	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1812	1-104-912-11	TANTAL CHIP	3 3uF	20%	6 3V
C1813	1-135-333-11	TANTAL CHIP	1uF	20%	16V
C1814	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1816	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
					(TRV54E/TRV56E/TRV94E)
C1819	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1820	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
					(TRV54E/TRV56E/TRV94E)
C1822	1-165-176-11	CERAMIC CHIP	0 047uF	10%	16V
C1823	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(TRV54E/TRV56E/TRV94E)
C1825	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1826	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
					(TRV54E/TRV56E/TRV94E)
C1827	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
					(TRV54E/TRV56E/TRV94E)
C1828	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1829	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C1832	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
					(TRV54E/TRV56E/TRV94E)
C1835	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C1836	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C1837	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C1838	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1839	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1840	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C1841	1-135-214-21	TANTAL CHIP	4 7uF	20%	20V
C1842	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1843	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1844	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
					(TRV94E AEP,UK)
C1845	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C1846	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
					(TRV62/TRV72)
C1846	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
					(TRV54E/TRV56E/TRV94E E,HK,JE)
C1901	1-135-214-21	TANTAL CHIP	4 7uF	20%	20V
C1902	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1903	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C1904	1-104-913-11	TANTAL CHIP	10uF	20%	16V
C1905	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C1906	1-107-686-11	TANTAL CHIP	4 7uF	20%	16V
C1909	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C1910	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C1911	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C1912	1-162-964-11	CERAMIC CHIP	0 001uF	10%	50V
C1913	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C1914	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C1915	1-165-319-11	CERAMIC CHIP	0 1uF		50V
C1916	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C1917	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C1918	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V

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Ref No	Part No	Description			Remark
C1919	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1951	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1952	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C1953	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1954	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1955	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1956	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C1957	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1958	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C1960	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1961	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C1962	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1963	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C1964	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C1965	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1966	1-164-346-11	CERAMIC CHIP	1uF		16V
C1967	1-104-911-11	TANTAL CHIP	33uF	20%	10V
C1968	1-164-664-11	CERAMIC CHIP	0.033uF	10%	50V
C1970	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1971	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1972	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1973	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1974	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1975	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1976	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
⚠C1977	1-113-521-11	CERAMIC CHIP	12PF	10%	3KV
C1978	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1979	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1980	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN1801	1-779-065-11	PIN, CONNECTOR (PC BOARD) 13P			
* CN1802	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN1901	1-779-064-11	PIN, CONNECTOR (PC BOARD) 12P			
CN1902	1-573-366-21	CONNECTOR, FFC/FPC 26P			
CN1951	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN1991	1-573-929-11	CONNECTOR, FFC/FPC (ZIF) 20P			
		< DIODE >			
D1801	8-713-102-80	DIODE	1T369-01-T8A		(TRV54E/TRV56E/TRV94E)
D1901	8-719-404-49	DIODE	MA111		
D1902	8-713-102-80	DIODE	1T369-01-T8A		
D1903	8-713-102-80	DIODE	1T369-01-T8A		
D1951	8-719-989-33	DIODE	FC806		
D1952	8-719-941-86	DIODE	DAN202U		
D1953	8-719-404-49	DIODE	MA111		
D1954	8-719-404-49	DIODE	MA111		
		< IC >			
IC1801	8-752-070-03	IC	CXA1785AR-T4		
IC1802	8-759-364-05	IC	M62376GP-65AD		
IC1803	8-759-079-52	IC	TC74VHC08FS(EL)		
IC1805	8-759-082-60	IC	TC7S66FU(TE85R) (TRV56E)		
IC1901	8-759-443-40	IC	CM7013L2-T4		
IC1902	8-759-359-49	IC	NJM3414AV(TE2)		

Ref No	Part No	Description			Remark
IC1951	8-759-060-94	IC	MB3785APFV-G-BND-ER		
IC1991	8-759-465-98	IC	BU9728AKV-E2		
		< COIL >			
L1801	1-412-963-11	INDUCTOR	100uH		
L1802	1-412-960-21	INDUCTOR	56uH (TRV54E/TRV56E/TRV94E)		
L1802	1-412-962-11	INDUCTOR	82uH (TRV62/TRV72)		
L1803	1-414-755-11	INDUCTOR	22uH		
L1804	1-412-956-21	INDUCTOR	27uH (TRV54E/TRV56E/TRV94E)		
L1805	1-414-754-11	INDUCTOR	10uH		
L1806	1-412-960-21	INDUCTOR	56uH (TRV94E:AEP,UK)		
L1901	1-414-754-11	INDUCTOR	10uH		
L1902	1-414-754-11	INDUCTOR	10uH		
L1903	1-414-754-11	INDUCTOR	10uH		
L1904	1-412-951-11	INDUCTOR	10uH		
L1951	1-412-056-11	INDUCTOR CHIP	4.7uH		
L1952	1-414-398-11	INDUCTOR	10uH		
L1953	1-424-674-11	COIL, CHOKE	22uH		
L1954	1-409-536-41	COIL, CHOKE	150uH		
L1955	1-414-757-11	INDUCTOR	100uH		
L1956	1-414-757-11	INDUCTOR	100uH		
L1957	1-414-757-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q1801	8-729-425-64	TRANSISTOR	2SD2216Q		
Q1802	8-729-425-50	TRANSISTOR	2SB1462Q		
Q1804	8-729-429-18	TRANSISTOR	UN9213 (TRV56E/TRV62/TRV72)		
Q1805	8-729-425-64	TRANSISTOR	2SD2216Q (TRV54E/TRV56E/TRV94E)		
Q1806	8-729-429-18	TRANSISTOR	UN9213 (TRV54E/TRV56E/TRV94E)		
Q1807	8-729-429-18	TRANSISTOR	UN9213 (TRV56E)		
Q1808	8-729-429-18	TRANSISTOR	UN9213 (TRV94E AEP,UK)		
Q1809	8-729-429-18	TRANSISTOR	UN9213 (TRV94E AEP,UK)		
Q1810	8-729-429-18	TRANSISTOR	UN9213 (TRV94E AEP,UK)		
Q1901	8-729-429-18	TRANSISTOR	UN9213 (TRV56E/TRV62/TRV72)		
Q1903	8-729-429-18	TRANSISTOR	UN9213 (TRV56E/TRV62/TRV72)		
Q1951	8-729-429-18	TRANSISTOR	UN9213		
Q1952	8-729-429-18	TRANSISTOR	UN9213		
Q1953	8-729-041-23	TRANSISTOR	NDS356AP		
Q1954	8-729-425-50	TRANSISTOR	2SB1462Q		
Q1955	8-729-823-84	TRANSISTOR	FP102		
Q1956	8-729-804-41	TRANSISTOR	2SB1122-S		
Q1957	8-729-039-43	TRANSISTOR	FP216-TL		
Q1958	8-729-425-50	TRANSISTOR	2SB1462Q		
Q1959	8-729-428-88	TRANSISTOR	UN9113		
Q1960	8-729-041-23	TRANSISTOR	NDS356AP		
		< RESISTOR >			
R1802	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1803	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1804	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1805	1-216-817-11	METAL CHIP	470	5%	1/16W
R1806	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1807	1-216-817-11	METAL CHIP	470	5%	1/16W

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Ref No	Part No	Description			Remark
R1808	1-216-842-11	METAL CHIP	56K	5%	1/16W
R1810	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1811	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R1812	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1813	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1814	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W
R1815	1-216-844-11	METAL CHIP	82K	5%	1/16W
R1816	1-216-851-11	METAL CHIP	330K	5%	1/16W
R1817	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1818	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1819	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1820	1-216-864-11	METAL CHIP	0	5%	1/16W
R1822	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1823	1-216-864-11	METAL CHIP	0	5%	1/16W
R1825	1-219-570-11	METAL GLAZE	10M	5%	1/16W (TRV54E/TRV56E/TRV94E)
R1826	1-216-835-11	METAL CHIP	15K	5%	1/16W (TRV62/TRV72)
R1826	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV56E/TRV94E E,HK,JE)
R1826	1-216-843-11	METAL CHIP	68K	5%	1/16W (TRV54E/TRV94E AEP,UK)
R1827	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1828	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1829	1-216-840-11	METAL CHIP	39K	5%	1/16W
R1830	1-216-838-11	METAL CHIP	27K	5%	1/16W (TRV62/TRV72)
R1830	1-216-839-11	METAL CHIP	33K	5%	1/16W (TRV54E/TRV56E/TRV94E)
R1831	1-216-839-11	METAL CHIP	33K	5%	1/16W (TRV56E/TRV94E E,HK,JE)
R1831	1-216-840-11	METAL CHIP	39K	5%	1/16W (TRV54E/TRV94E AEP,UK)
R1831	1-216-843-11	METAL CHIP	68K	5%	1/16W (TRV62/TRV72)
R1832	1-216-836-11	METAL CHIP	18K	5%	1/16W
R1833	1-216-840-11	METAL CHIP	39K	5%	1/16W
R1834	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1835	1-216-839-11	METAL CHIP	33K	5%	1/16W
R1836	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1837	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1838	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1839	1-216-837-11	METAL CHIP	22K	5%	1/16W (TRV54E/TRV56E/TRV94E)
R1840	1-216-830-11	METAL CHIP	5 6K	5%	1/16W (TRV54E/TRV56E/TRV94E)
R1841	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV54E/TRV56E/TRV94E)
R1842	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1843	1-216-817-11	METAL CHIP	470	5%	1/16W (TRV54E/TRV56E/TRV94E)
R1843	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV62/TRV72)
R1844	1-216-857-11	METAL CHIP	1M	5%	1/16W (TRV56E/TRV62/TRV72)
R1846	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1847	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1848	1-216-829-11	METAL CHIP	4 7K	5%	1/16W (TRV54E/TRV56E/TRV94E)
R1849	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1852	1-216-864-11	METAL CHIP	0	5%	1/16W (TRV54E/TRV56E/TRV94E)
R1853	1-216-805-11	METAL CHIP	47	5%	1/16W
R1854	1-216-805-11	METAL CHIP	47	5%	1/16W
R1855	1-216-805-11	METAL CHIP	47	5%	1/16W
R1856	1-216-832-11	METAL CHIP	8 2K	5%	1/16W (TRV54E/TRV62/TRV72/TRV94E)
R1856	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W (TRV56E)
R1857	1-216-830-11	METAL CHIP	5 6K	5%	1/16W (TRV54E/TRV62/TRV72/TRV94E)
R1857	1-218-877-11	METAL GLAZE	18K	0 50%	1/16W (TRV56E)
R1858	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1859	1-216-838-11	METAL CHIP	27K	5%	1/16W
R1860	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1861	1-218-885-11	METAL GLAZE	39K	0 50%	1/16W (TRV56E)
R1863	1-218-885-11	METAL GLAZE	39K	0 50%	1/16W (TRV56E)
R1864	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV94E AEP,UK)
R1901	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1902	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1903	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1904	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1905	1-216-839-11	METAL CHIP	33K	5%	1/16W
R1906	1-216-864-11	METAL CHIP	0	5%	1/16W
R1908	1-216-840-11	METAL CHIP	39K	5%	1/16W
R1909	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1910	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1911	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1912	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1913	1-216-864-11	METAL CHIP	0	5%	1/16W
R1914	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R1915	1-218-893-11	METAL GLAZE	82K	0 50%	1/16W (TRV54E/TRV56E/TRV94E)
R1915	1-218-895-11	METAL GLAZE	100K	0 50%	1/16W (TRV62/TRV72)
R1916	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1917	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1918	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R1919	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1920	1-216-829-11	METAL CHIP	4 7K	5%	1/16W (TRV54E/TRV62/TRV72)
R1922	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1923	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1925	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1926	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1928	1-216-864-11	METAL CHIP	0	5%	1/16W
R1929	1-216-864-11	METAL CHIP	0	5%	1/16W
R1930	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1931	1-216-850-11	METAL CHIP	270K	5%	1/16W (TRV54E/TRV62/TRV72)
R1931	1-216-851-11	METAL CHIP	330K	5%	1/16W (TRV56E/TRV94E)
R1932	1-216-864-11	METAL CHIP	0	5%	1/16W
R1933	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1934	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref No	Part No	Description				Remark
R1935	1-218-889-11	METAL GLAZE	56K	0.50%	1/16W	(TRV62/TRV72)
R1935	1-218-891-11	METAL GLAZE	68K	0.50%	1/16W	(TRV54E/TRV56E/TRV94E)
R1936	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1951	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1952	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R1953	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1954	1-218-887-11	METAL GLAZE	47K	0.50%	1/16W	
R1955	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W	
R1956	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R1957	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R1958	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R1959	1-218-875-11	METAL GLAZE	15K	0.50%	1/16W	
R1960	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W	
R1961	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1962	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W	
R1963	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W	
R1964	1-218-889-11	METAL GLAZE	56K	0.50%	1/16W	
R1965	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R1966	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R1967	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1968	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W	
R1969	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1970	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R1971	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R1972	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R1973	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R1974	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1975	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R1976	1-216-813-11	METAL CHIP	220	5%	1/16W	
R1977	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R1978	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R1979	1-216-810-11	METAL CHIP	120	5%	1/16W	
R1980	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R1981	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1983	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R1984	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R1991	1-216-853-11	METAL CHIP	470K	5%	1/16W	(TRV94E AEP,UK)
R1991	1-216-855-11	METAL CHIP	680K	5%	1/16W	(TRV54E/TRV56E/TRV62/TRV72/TRV94E E,HK,JE)
R1995	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R1996	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R1997	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1998	1-216-838-11	METAL CHIP	27K	5%	1/16W	
		< SWITCH >				
S1991	1-692-088-41	SWITCH, TACTILE (LCD BRIGHT +)				
S1992	1-692-088-41	SWITCH, TACTILE (LCD BRIGHT -)				
S1993	1-692-088-41	SWITCH, TACTILE (VOLUME +)				
S1994	1-692-088-41	SWITCH, TACTILE (VOLUME -)				
S1995	1-572-467-71	SWITCH, PUSH (1 KEY)(PANEL MIRROR)				
		< TRANSFORMER >				
⚠T1951	1-431-213-21	TRANSFORMER, DC-DC CONVERTER				
⚠T1952	1-429-507-31	TRANSFORMER, INVERTER				

Ref No	Part No	Description	Remark
		< VIBRATOR >	
X1801	1-579-466-11	VIBRATOR, CRYSTAL (3.579645MHz)	(TRV62/TRV72)
X1801	1-579-661-21	OSCILLATOR, CRYSTAL (4.43619MHz)	(TRV54E/TRV56E/TRV94E)

A-7093-196-A PD-82 (C25PE) BOARD, COMPLETE
****
(TRV64E AEP,EE,NE,RU,UK)

A-7093-202-A PD-82 (C25CN) BOARD, COMPLETE(TRV64E CH)
****
(Ref No 30,000 Series)

Ref No	Part No	Description			
		< CAPACITOR >			
C1901	1-135-214-21	TANTAL CHIP	4.7uF	20%	20V
C1902	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1903	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1904	1-104-913-11	TANTAL CHIP	10uF	20%	16V
C1905	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1906	1-107-686-11	TANTAL CHIP	4.7uF	20%	16V
C1909	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C1910	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C1911	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1912	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1913	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C1914	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1915	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C1916	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1917	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1918	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1919	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1951	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1952	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C1953	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1954	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1955	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1956	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C1957	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1958	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C1960	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1961	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C1962	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1963	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C1964	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C1965	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1966	1-164-346-11	CERAMIC CHIP	1uF		16V
C1967	1-104-911-11	TANTAL CHIP	33uF	20%	10V
C1968	1-163-063-91	CERAMIC CHIP	0.022uF	10%	50V
C1970	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1971	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1972	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1973	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1974	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1975	1-164-505-11	CERAMIC CHIP	2.2uF		16V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
C1976	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
⚠C1977	1-113-521-11	CERAMIC CHIP	12PF	10%	3KV
C1978	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1979	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1980	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
		< CONNECTOR >			
CN1901	1-770-629-21	PIN, CONNECTOR 12P			
CN1902	1-573-935-11	CONNECTOR, FFC/FPC (ZIF) 26P			
CN1903	1-774-646-21	CONNECTOR, FFC/FPC 24P			
* CN1904	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN1951	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
		< DIODE >			
D1901	8-719-404-49	DIODE MA111			
D1902	8-713-102-80	DIODE 1T369-01-T8A			
D1903	8-713-102-80	DIODE 1T369-01-T8A			
D1951	8-719-989-33	DIODE FC806			
D1952	8-719-941-86	DIODE DAN202U			
D1953	8-719-404-49	DIODE MA111			
D1954	8-719-058-86	DIODE PG1101H-TR			
D1955	8-719-404-49	DIODE MA111			
		< IC >			
IC1901	8-759-443-40	IC CM7013L2-T4			
IC1902	8-759-359-49	IC NJM3414AV(TE2)			
IC1951	8-759-060-94	IC MB3785APFV-G-BND-ER			
		< COIL >			
L1901	1-414-078-11	INDUCTOR	10uH		
L1902	1-414-078-11	INDUCTOR	10uH		
L1903	1-414-754-11	INDUCTOR	10uH		
L1904	1-412-953-11	INDUCTOR	15uH		
L1951	1-412-056-11	INDUCTOR CHIP	4.7uH		
L1952	1-414-398-11	INDUCTOR	10uH		
L1953	1-424-674-11	COIL, CHOKE	22uH		
L1954	1-409-536-41	COIL, CHOKE	150uH		
L1955	1-414-757-11	INDUCTOR	100uH		
L1956	1-414-757-11	INDUCTOR	100uH		
L1957	1-414-757-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q1901	8-729-429-18	TRANSISTOR UN9213			
Q1903	8-729-429-18	TRANSISTOR UN9213			
Q1904	8-729-429-18	TRANSISTOR UN9213			
Q1951	8-729-429-18	TRANSISTOR UN9213			
Q1952	8-729-429-18	TRANSISTOR UN9213			
Q1953	8-729-041-23	TRANSISTOR NDS356AP			
Q1954	8-729-425-50	TRANSISTOR 2SB1462Q			
Q1955	8-729-823-84	TRANSISTOR FP102			
Q1956	8-729-804-41	TRANSISTOR 2SB1122-S			
Q1957	8-729-039-43	TRANSISTOR FP216-TL			
Q1958	8-729-425-50	TRANSISTOR 2SB1462Q			
Q1959	8-729-428-88	TRANSISTOR UN9113			
Q1960	8-729-041-23	TRANSISTOR NDS356AP			
		< RESISTOR >			
R1901	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1902	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1903	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1904	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1905	1-216-839-11	METAL CHIP	33K	5%	1/16W
R1906	1-216-864-11	METAL CHIP	0	5%	1/16W
R1907	1-216-864-11	METAL CHIP	0	5%	1/16W
R1908	1-216-840-11	METAL CHIP	39K	5%	1/16W
R1909	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1910	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1911	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1912	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1913	1-216-864-11	METAL CHIP	0	5%	1/16W
R1914	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1915	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W (TRV64E:CH)
R1915	1-218-885-11	METAL GLAZE	39K	0.50%	1/16W (TRV64E:AEP,EE,NE,RU,UK)
R1916	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1917	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1918	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1919	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1920	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1922	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1923	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1924	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1925	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1926	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1928	1-216-864-11	METAL CHIP	0	5%	1/16W
R1929	1-216-864-11	METAL CHIP	0	5%	1/16W
R1930	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1931	1-216-850-11	METAL CHIP	270K	5%	1/16W
R1932	1-216-864-11	METAL CHIP	0	5%	1/16W
R1933	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1934	1-216-864-11	METAL CHIP	0	5%	1/16W
R1951	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1952	1-216-840-11	METAL CHIP	39K	5%	1/16W
R1953	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1954	1-218-887-11	METAL GLAZE	47K	0.50%	1/16W
R1955	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W
R1956	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1957	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1958	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1959	1-218-875-11	METAL GLAZE	15K	0.50%	1/16W
R1960	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W
R1961	1-216-864-11	METAL CHIP	0	5%	1/16W
R1962	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W
R1963	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W
R1964	1-218-889-11	METAL GLAZE	56K	0.50%	1/16W
R1965	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R1966	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1967	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1968	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W
R1969	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1970	1-216-851-11	METAL CHIP	330K	5%	1/16W
R1971	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1972	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1973	1-216-851-11	METAL CHIP	330K	5%	1/16W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
R1974	1-216-817-11	METAL CHIP 470 5%	1/16W
R1975	1-216-841-11	METAL CHIP 47K 5%	1/16W
R1976	1-216-813-11	METAL CHIP 220 5%	1/16W
R1977	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R1978	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R1979	1-216-810-11	METAL CHIP 120 5%	1/16W
R1980	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1981	1-216-817-11	METAL CHIP 470 5%	1/16W
R1983	1-216-857-11	METAL CHIP 1M 5%	1/16W
R1984	1-216-845-11	METAL CHIP 100K 5%	1/16W
R1986	1-216-843-11	METAL CHIP 68K 5%	1/16W
R1995	1-216-826-11	METAL CHIP 2.7K 5%	1/16W
R1996	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1997	1-216-833-11	METAL CHIP 10K 5%	1/16W
R1998	1-216-838-11	METAL CHIP 27K 5%	1/16W

< SWITCH >

Ref. No.	Part No.	Description	Remark
S1991	1-692-088-41	SWITCH, TACTILE (LCD BRIGHT +)	
S1992	1-692-088-41	SWITCH, TACTILE (LCD BRIGHT -)	
S1993	1-692-088-41	SWITCH, TACTILE (VOLUME +)	
S1994	1-692-088-41	SWITCH, TACTILE (VOLUME -)	
S1995	1-572-467-71	SWITCH, PUSH (1 KEY)(PANEL MIRROR)	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
⚠T1951	1-431-213-21	TRANSFORMER, DC-DC CONVERTER	
⚠T1952	1-429-547-31	TRANSFORMER, INVERTER	

A-7073-101-A PJ-80 (VHCRJ) BOARD, COMPLETE
****
(TRV64E:CH/TRV94/TRV94E:E,HK,JE)

A-7073-121-A PJ-80 (VHCRP) BOARD, COMPLETE
****
(TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)

A-7073-176-A PJ-80 (HCI) BOARD, COMPLETE
****
(TRV62/TRV72/TRV82)

A-7073-231-A PJ-80 (VMR35PE) BOARD, COMPLETE
****
(TRV54E/TRV56E)
(Ref. No. 3,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C101	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)
C102	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)
C103	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)
C104	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)
C105	1-110-569-11	TANTAL. CHIP 47uF 20%	6.3V
C106	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV54E/TRV56E/TRV62/TRV64E:AEP,EE,NE,RU,UK/TRV72/TRV82/ TRV94E:AEP,UK)
C107	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)
C108	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV54E/TRV56E/TRV62/TRV64E:AEP,EE,NE,RU,UK/TRV72/TRV82/ TRV94E:AEP,UK)
C109	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV54E/TRV56E/TRV62/TRV64E:AEP,EE,NE,RU,UK/TRV72/TRV82/ TRV94E:AEP,UK)
C110	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)
C111	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (TRV54E/TRV56E/TRV62/TRV64E:AEP,EE,NE,RU,UK/TRV72/TRV82/ TRV94E:AEP,UK)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN101	1-764-516-21	CONNECTOR, FFC/FPC (ZIF) 6P	
CN102	1-764-526-11	CONNECTOR, FFC/FPC (ZIF) 18P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D101	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D102	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D103	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D104	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D105	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D106	8-719-062-16	DIODE 01ZA8.2(TPL3)	(EXCEPT TRV54E/TRV56E)
D107	8-719-062-16	DIODE 01ZA8.2(TPL3)	(EXCEPT TRV54E/TRV56E)
D108	8-719-420-14	DIODE MA8082-M	(EXCEPT TRV54E/TRV56E)

< JACK >

Ref. No.	Part No.	Description	Remark
J101	1-537-747-21	TERMINAL BOARD (S VIDEO, VIDEO, AUDIO, RFU DC OUT)	(EXCEPT TRV54E/TRV56E)
J101	1-537-747-31	TERMINAL BOARD (VIDEO, AUDIO, RFU DC OUT)	(TRV54E/TRV56E)

< COIL >

Ref. No.	Part No.	Description	Remark
L101	1-414-072-11	INDUCTOR 1uH	
L102	1-412-963-11	INDUCTOR 100uH	(TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)
L103	1-412-963-11	INDUCTOR 100uH	(TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)
L104	1-412-963-11	INDUCTOR 100uH	(TRV64E:AEP,EE,NE,RU,UK/TRV94E:AEP,UK)

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q101	8-729-101-07	TRANSISTOR 2SB798-DL	
Q102	8-729-425-64	TRANSISTOR 2SD2216Q	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R101	1-216-864-11	METAL CHIP 0 5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E:CH/TRV72/TRV82/TRV94/ TRV94E:E,HK,JE)
R102	1-216-864-11	METAL CHIP 0 5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E:CH/TRV72/TRV82/TRV94/ TRV94E:E,HK,JE)
R103	1-216-295-91	CONDUCTOR, CHIP (2012)	(TRV64E:CH/TRV94/TRV94E:E,HK,JE)
R103	1-412-963-11	INDUCTOR 100uH	(TRV54E/TRV56E/TRV62/TRV64E:AEP,EE,NE,RU,UK/TRV72/TRV82/ TRV94E:AEP,UK)
R104	1-216-138-00	METAL CHIP 3.3 5%	1/8W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref No	Part No	Description			Remark
R105	1-216-864-11	METAL CHIP	0	5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/ TRV94E E,HK,JE)
R106	1-216-295-91	CONDUCTOR, CHIP (2012)			(TRV64E CH/TRV94/TRV94E E,HK,JE)
R106	1-412-963-11	INDUCTOR	100uH		(TRV54E/TRV56E/TRV62/TRV64E AEP,EE,NE,RU,UK/TRV72/TRV82/ TRV94E AEP,UK)
R107	1-216-830-11	METAL CHIP	5 6K	5%	1/16W
R108	1-216-820-11	METAL CHIP	820	5%	1/16W
R109	1-216-836-11	METAL CHIP	18K	5%	1/16W
R110	1-216-864-11	METAL CHIP	0	5%	1/16W
R111	1-216-864-11	METAL CHIP	0	5%	1/16W (EXCEPT TRV54E/TRV56E)
R112	1-216-864-11	METAL CHIP	0	5%	1/16W (EXCEPT TRV54E/TRV56E)
R120	1-216-821-11	METAL CHIP	1K	5%	1/16W (EXCEPT TRV54E/TRV56E)
R121	1-216-821-11	METAL CHIP	1K	5%	1/16W

A-7073-097-A SD-27 BOARD, COMPLETE (EXCEPT TRV64E)

****

(Ref No 6,000 Series)

Ref No	Part No	Description			Remark
		< BATTERY HOLDER >			
BH001	1-550-104-32	HOLDER, BATTERY			
		< CAPACITOR >			
C004	1-104-908-11	TANTAL CHIP	47uF	20%	4V
C005	1-104-908-11	TANTAL CHIP	47uF	20%	4V
C010	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C013	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C014	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C015	1-164-346-11	CERAMIC CHIP	1uF		16V
C016	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V
C017	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C018	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C020	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C021	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
		< CONNECTOR >			
CN001	1-573-368-11	CONNECTOR, FFC/FPC 28P			
CN002	1-750-360-21	CONNECTOR, FFC/FPC (ZIF) 24P			
CN003	1-580-055-21	PIN, CONNECTOR 2P			
CN004	1-779-064-11	PIN, CONNECTOR (PC BOARD) 12P			
CN005	1-779-065-11	PIN, CONNECTOR (PC BOARD) 13P			
CN006	1-766-866-21	CONNECTOR, FFC/FPC 6P			
CN007	1-766-759-11	CONNECTOR, FFC/FPC 4P			
* CN008	1-764-521-11	CONNECTOR, FFC/FPC (ZIF) 12P			
		< DIODE >			
D001	8-719-062-16	DIODE 01ZA8 2(TPL3)			
D002	8-719-420-14	DIODE MA8082-M			
D003	8-719-420-14	DIODE MA8082-M			
D010	8-719-404-49	DIODE MA111			
		< IC >			
IC001	8-759-456-30	IC BA7787FS-E2			
		< COIL >			
L001	1-414-400-11	INDUCTOR	22uH		
		< TRANSISTOR >			
Q001	8-729-037-78	TRANSISTOR	UN9217J-(TX) SO		
Q002	8-729-429-18	TRANSISTOR	UN9213		
Q003	8-729-429-18	TRANSISTOR	UN9213		
Q004	8-729-429-18	TRANSISTOR	UN9213		
Q005	8-729-013-60	TRANSISTOR	RN1110-TE85L		
Q006	8-729-013-60	TRANSISTOR	RN1110-TE85L		
		< RESISTOR >			
R001	1-216-821-11	METAL CHIP	1K	5%	1/16W
R002	1-216-821-11	METAL CHIP	1K	5%	1/16W
R004	1-216-833-11	METAL CHIP	10K	5%	1/16W
R005	1-216-833-11	METAL CHIP	10K	5%	1/16W
R007	1-216-833-11	METAL CHIP	10K	5%	1/16W
R008	1-216-809-11	METAL CHIP	100	5%	1/16W
R009	1-216-809-11	METAL CHIP	100	5%	1/16W
R011	1-216-824-11	METAL CHIP	1 8K	5%	1/16W
R012	1-216-824-11	METAL CHIP	1 8K	5%	1/16W
R014	1-216-824-11	METAL CHIP	1 8K	5%	1/16W
R015	1-216-826-11	METAL CHIP	2 7K	5%	1/16W
R016	1-216-826-11	METAL CHIP	2 7K	5%	1/16W
R020	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R021	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R025	1-216-852-11	METAL CHIP	390K	5%	1/16W
R027	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R028	1-216-833-11	METAL CHIP	10K	5%	1/16W
R029	1-216-833-11	METAL CHIP	10K	5%	1/16W
R031	1-216-864-11	METAL CHIP	0	5%	1/16W
R032	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R034	1-216-849-11	METAL CHIP	220K	5%	1/16W
R035	1-216-838-11	METAL CHIP	27K	5%	1/16W
R036	1-216-838-11	METAL CHIP	27K	5%	1/16W
R046	1-216-834-11	METAL CHIP	12K	5%	1/16W
R047	1-216-834-11	METAL CHIP	12K	5%	1/16W
R049	1-216-837-11	METAL CHIP	22K	5%	1/16W
R050	1-216-837-11	METAL CHIP	22K	5%	1/16W
R051	1-216-845-11	METAL CHIP	100K	5%	1/16W
R052	1-216-845-11	METAL CHIP	100K	5%	1/16W
R055	1-216-845-11	METAL CHIP	100K	5%	1/16W
R065	1-216-821-11	METAL CHIP	1K	5%	1/16W
R066	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R067	1-216-834-11	METAL CHIP	12K	5%	1/16W
R068	1-216-864-11	METAL CHIP	0	5%	1/16W
R069	1-216-864-11	METAL CHIP	0	5%	1/16W
R070	1-216-864-11	METAL CHIP	0	5%	1/16W
		< SWITCH >			
S017	1-771-030-11	SWITCH, PUSH (PANEL CLOSE)			

Ref No	Part No	Description			Remark
	A-7073-211-A	SD-28 BOARD, COMPLETE (TRV64E) ******************************			
		(Ref No 7,000 Series)			
		< BATTERY HOLDER >			
BH001	1-550-104-32	HOLDER, BATTERY			
		< CAPACITOR >			
C004	1-104-908-11	TANTAL CHIP	47uF	20%	4V
C005	1-104-908-11	TANTAL CHIP	47uF	20%	4V
C010	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C013	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C014	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C015	1-164-346-11	CERAMIC CHIP	1uF		16V
C016	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V
C017	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C018	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C020	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C021	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
		< CONNECTOR >			
CN001	1-573-368-11	CONNECTOR, FFC/FPC 28P			
CN002	1-750-360-21	CONNECTOR, FFC/FPC (ZIF) 24P			
CN003	1-580-055-21	PIN, CONNECTOR 2P			
CN004	1-770-629-21	PIN, CONNECTOR 12P			
CN005	1-779-065-11	PIN, CONNECTOR (PC BOARD) 13P			
CN006	1-766-866-21	CONNECTOR, FFC/FPC 6P			
CN007	1-766-759-11	CONNECTOR, FFC/FPC 4P			
CN008	1-691-350-21	CONNECTOR, FFC/FPC (ZIF) 12P			
		< DIODE >			
D001	8-719-062-16	DIODE	01ZA8 2(TPL3)		
D002	8-719-420-14	DIODE	MA8082-M		
D003	8-719-420-14	DIODE	MA8082-M		
D010	8-719-404-49	DIODE	MA111		
		< IC >			
IC001	8-759-456-30	IC	BA7787FS-E2		
		< COIL >			
L001	1-414-400-11	INDUCTOR	22uH		
		< TRANSISTOR >			
Q001	8-729-037-78	TRANSISTOR	UN9217J-(TX) SO		
Q002	8-729-429-18	TRANSISTOR	UN9213		
Q003	8-729-429-18	TRANSISTOR	UN9213		
Q004	8-729-429-18	TRANSISTOR	UN9213		
Q005	8-729-013-60	TRANSISTOR	RN1110-TE85L		
Q006	8-729-013-60	TRANSISTOR	RN1110-TE85L		
		< RESISTOR >			
R001	1-216-821-11	METAL CHIP	1K	5%	1/16W
R002	1-216-821-11	METAL CHIP	1K	5%	1/16W
R004	1-216-833-11	METAL CHIP	10K	5%	1/16W
R005	1-216-833-11	METAL CHIP	10K	5%	1/16W
R007	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref No	Part No	Description			Remark
R008	1-216-809-11	METAL CHIP	100	5%	1/16W
R009	1-216-809-11	METAL CHIP	100	5%	1/16W
R011	1-216-824-11	METAL CHIP	1 8K	5%	1/16W
R012	1-216-824-11	METAL CHIP	1 8K	5%	1/16W
R014	1-216-824-11	METAL CHIP	1 8K	5%	1/16W
R015	1-216-826-11	METAL CHIP	2 7K	5%	1/16W
R016	1-216-826-11	METAL CHIP	2 7K	5%	1/16W
R020	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R021	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R025	1-216-852-11	METAL CHIP	390K	5%	1/16W
R027	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R028	1-216-833-11	METAL CHIP	10K	5%	1/16W
R029	1-216-833-11	METAL CHIP	10K	5%	1/16W
R031	1-216-864-11	METAL CHIP	0	5%	1/16W
R032	1-216-826-11	METAL CHIP	2 7K	5%	1/16W
R034	1-216-849-11	METAL CHIP	220K	5%	1/16W
R035	1-216-838-11	METAL CHIP	27K	5%	1/16W
R036	1-216-838-11	METAL CHIP	27K	5%	1/16W
R046	1-216-834-11	METAL CHIP	12K	5%	1/16W
R047	1-216-834-11	METAL CHIP	12K	5%	1/16W
R049	1-216-837-11	METAL CHIP	22K	5%	1/16W
R050	1-216-837-11	METAL CHIP	22K	5%	1/16W
R051	1-216-845-11	METAL CHIP	100K	5%	1/16W
R052	1-216-845-11	METAL CHIP	100K	5%	1/16W
R055	1-216-845-11	METAL CHIP	100K	5%	1/16W
R065	1-216-821-11	METAL CHIP	1K	5%	1/16W
R066	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R067	1-216-834-11	METAL CHIP	12K	5%	1/16W
R068	1-216-864-11	METAL CHIP	0	5%	1/16W
R069	1-216-864-11	METAL CHIP	0	5%	1/16W
R070	1-216-864-11	METAL CHIP	0	5%	1/16W
		< SWITCH >			
S012	1-692-111-11	SWITCH, KEY BOARD (FADER)			
S017	1-771-028-11	SWITCH, PUSH (PANEL CLOSE)			

Ref No	Part No	Description			Remark
	A-7073-099-A	SE-61 (VHCRJ) BOARD, COMPLETE *****************************			
		(Ref No 1,000 Series)			
		< CAPACITOR >			
C451	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C452	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C453	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C454	1-164-245-11	CERAMIC CHIP	0 015uF	10%	25V
C455	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C456	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C457	1-164-245-11	CERAMIC CHIP	0 015uF	10%	25V
C458	1-164-489-11	CERAMIC CHIP	0 22uF	10%	16V
C459	1-164-489-11	CERAMIC CHIP	0 22uF	10%	16V
C460	1-128-257-21	ELECT CHIP	33uF	20%	10V
C461	1-128-257-21	ELECT CHIP	33uF	20%	10V
C462	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C467	1-110-501-11	CERAMIC CHIP	0 33uF	10%	16V
C468	1-164-156-11	CERAMIC CHIP	0 1uF		25V
C469	1-115-156-11	CERAMIC CHIP	1uF		10V

Ref No	Part No	Description				Remark
		< CONNECTOR >				
CN451	1-766-673-21	CONNECTOR, FFC/FPC 12P				
		< FERRITE BEAD >				
FB451	1-414-228-11	INDUCTOR, FERRITE BEAD				
		< IC >				
IC451	8-759-080-34	IC TA75W01FU				
IC453	8-759-062-66	IC TC7S66F				
IC454	8-759-062-66	IC TC7S66F				
IC455	8-759-388-62	IC NJU7062M(TE2)				
		< COIL >				
L452	1-414-754-11	INDUCTOR	10uH			
		< RESISTOR >				
R451	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R452	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R453	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R454	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R455	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R456	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R457	1-216-803-11	METAL CHIP	33	5%	1/16W	
R458	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R459	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R460	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R461	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R464	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R465	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R466	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R467	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R468	1-216-835-11	METAL CHIP	15K	5%	1/16W	
		< SENSOR >				
SE451	1-810-889-71	SENSOR, ANGULAR VELOCITY (YAW)				
SE452	1-810-889-81	SENSOR, ANGULAR VELOCITY (PITCH)				

Ref No	Part No	Description				Remark
	A-7093-190-A	VC-190 (VHCRP) BOARD, COMPLETE *******************************				(TRV94E AEP,UK)
	A-7093-195-A	VC-190 (VH25PE) BOARD, COMPLETE ********************************				(TRV64E AEP,EE,NE,RU,UK)
	A-7093-201-A	VC-190 (VH25CN) BOARD, COMPLETE ********************************				(TRV64E CH)
	A-7093-209-A	VC-190 (VMR35PE) BOARD, COMPLETE *********************************				(TRV54E)
	A-7093-213-A	VC-190 (VHC35) BOARD, COMPLETE (TRV72) **				
	A-7093-218-A	VC-190 (VM35P) BOARD, COMPLETE (TRV56E) **				
	A-7093-220-A	VC-190 (VHCRPE) BOARD, COMPLETE ********************************				(TRV94E E,HK,JE)
	A-7093-222-A	VC-190 (VHCRE) BOARD, COMPLETE (TRV94) **				
	A-7093-234-A	VC-190 (VHCI) BOARD, COMPLETE (TRV82) **************************************				
	A-7093-248-A	VC-190 (VH35) BOARD, COMPLETE (TRV62) **************************************				(Ref No 10,000 Series)
		< CAPACITOR >				
C251	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C252	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C253	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C254	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C255	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C256	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C258	1-104-752-11	TANTAL CHIP	33uF	20%	6.3V	
C263	1-115-156-11	CERAMIC CHIP	1uF		10V	
C266	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C267	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C268	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V	
C269	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C271	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C274	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C276	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C1005	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1008	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
C1009	1-104-752-11	TANTAL CHIP	33uF	20%	6.3V	
C1010	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
C1011	1-104-752-11	TANTAL CHIP	33uF	20%	6.3V	
C1012	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	
C1013	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C1014	1-162-926-11	CERAMIC CHIP	82PF	5%	50V	
C1015	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1016	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C1017	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV54E/TRV56E/TRV64E/TRV94E)
C1018	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV54E/TRV56E/TRV64E/TRV94E)
C1019	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV62/TRV72/TRV82/TRV94)
C1020	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV54E/TRV56E/TRV64E/TRV94E)
C1021	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV62/TRV72/TRV82/TRV94)
C1022	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV62/TRV72/TRV82/TRV94)

Ref. No	Part No	Description				Remark
C1023	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV62/TRV72/TRV82/TRV94)
C1024	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV62/TRV72/TRV82/TRV94)
C1025	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C1026	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1027	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C1028	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C1029	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV62/TRV72/TRV82/TRV94)
C1034	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V	
C1035	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1036	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C1037	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C1039	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1040	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V	
C1041	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1042	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1043	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV94/TRV94E)
C1044	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV62/TRV72/TRV82/TRV94)
C1045	1-162-961-11	CERAMIC CHIP	330PF	10%	50V	
C1046	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV62/TRV72/TRV82/TRV94)
C1051	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V	
C1052	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV94/TRV94E)
C1053	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1054	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1056	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV94/TRV94E)
C1058	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1060	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1063	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1065	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C1068	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	
C1070	1-162-925-11	CERAMIC CHIP	68PF	5%	50V	
C1071	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1073	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C1074	1-162-926-11	CERAMIC CHIP	82PF	5%	50V	
C1076	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V	
C1077	1-162-958-11	CERAMIC CHIP	270PF	5%	50V	
C1078	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V	
C1080	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1081	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	
C1083	1-162-958-11	CERAMIC CHIP	270PF	5%	50V	
C1084	1-162-959-11	CERAMIC CHIP	330PF	5%	50V	
C1085	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	
C1086	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	(EXCEPT TRV54E/TRV56E)
C1087	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	(TRV62/TRV72/TRV82/TRV94)
C1087	1-162-922-11	CERAMIC CHIP	39PF	5%	50V	(TRV64E/TRV94E)
C1089	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C1090	1-162-922-11	CERAMIC CHIP	39PF	5%	50V	(TRV62/TRV72/TRV82/TRV94)
C1090	1-162-925-11	CERAMIC CHIP	68PF	5%	50V	(TRV64E/TRV94E)
C1091	1-162-920-11	CERAMIC CHIP	27PF	5%	50V	
C1092	1-162-918-11	CERAMIC CHIP	18PF	5%	50V	
C1093	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V	
C1094	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	(EXCEPT TRV54E/TRV56E)
C1095	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	(TRV64E/TRV94E)
C1095	1-162-922-11	CERAMIC CHIP	39PF	5%	50V	(TRV62/TRV72/TRV82/TRV94)
C1096	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1097	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1140	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1141	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V	
C1144	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1147	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C1149	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1150	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V	
C1152	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C1153	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	
C1154	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C1155	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1156	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1158	1-115-156-11	CERAMIC CHIP	1uF		10V	
C1160	1-115-156-11	CERAMIC CHIP	1uF		10V	
C1164	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C1165	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V	
C1166	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1167	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1173	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	(TRV62/TRV72/TRV82/TRV94)
C1201	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V	
C1202	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V	
C1203	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C1204	1-164-392-11	CERAMIC CHIP	390PF	5%	50V	
C1205	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1206	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C1207	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1208	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1209	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C1210	1-115-156-11	CERAMIC CHIP	1uF		10V	
C1212	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C1213	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C1215	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C1216	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1217	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V	
C1218	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1220	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	
C1222	1-115-156-11	CERAMIC CHIP	1uF		10V	
C1223	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1224	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C1227	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C1228	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C1229	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1230	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C1231	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C1232	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C1233	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C1234	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	

Ref No	Part No	Description			Remark
C1236	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1237	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1240	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1280	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C1282	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
C1283	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C1285	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1301	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1302	1-104-852-11	TANTAL CHIP	22uF	20%	6.3V
C1306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1307	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1308	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C1309	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
					(EXCEPT TRV54E/TRV56E)
C1310	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C1311	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C1312	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(EXCEPT TRV54E/TRV56E)
C1313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1314	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C1315	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1317	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1318	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C1319	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1320	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1321	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
C1322	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
					(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
C1323	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
					(TRV54E/TRV56E/TRV62/TRV64E.CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
C1324	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
					(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
C1326	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
					(TRV54E/TRV56E/TRV62/TRV64E.CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
C1327	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
C1328	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
					(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
C1330	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(EXCEPT TRV54E/TRV56E)
C1331	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
					(EXCEPT TRV54E/TRV56E)
C1332	1-126-246-11	ELECT CHIP	220uF	20%	4V
					(EXCEPT TRV54E/TRV56E)
C1333	1-126-246-11	ELECT CHIP	220uF	20%	4V
C1334	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C1335	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1337	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C1338	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1339	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1340	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1342	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
					(TRV54E/TRV56E/TRV64E CH/TRV94E E,HK,JE)
C1342	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
					(TRV62/TRV72/TRV82/TRV94)
C1343	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
					(TRV54E/TRV56E/TRV64E CH/TRV94E E,HK,JE)

Ref No	Part No	Description			Remark
C1343	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
					(TRV62/TRV72/TRV82/TRV94)
C1344	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
					(TRV62/TRV72/TRV82/TRV94)
C1350	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
					(TRV62/TRV72/TRV82/TRV94)
C1351	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1352	1-115-156-11	CERAMIC CHIP	1uF		10V
					(TRV62/TRV72/TRV82/TRV94)
C1353	1-164-156-11	CERAMIC CHIP	0.1uF		25V
					(TRV62/TRV72/TRV82/TRV94)
C1370	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C1403	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C1404	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C1405	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1406	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C1407	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C1409	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C1410	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1411	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C1412	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C1414	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1415	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C1416	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C1417	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C1422	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C1423	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C1424	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1425	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C1426	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C1429	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1430	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1431	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C1432	1-104-908-11	TANTAL CHIP	47uF	20%	4V
C1433	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1434	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1435	1-104-752-11	TANTAL CHIP	33uF	20%	6.3V
C1437	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C1439	1-104-852-11	TANTAL CHIP	22uF	20%	6.3V
C1463	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1465	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1466	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1468	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C1475	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1476	1-216-841-11	METAL CHIP	47K	5%	1/16W
C1477	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1481	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1488	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1489	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1490	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1492	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1601	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C1602	1-115-156-11	CERAMIC CHIP	1uF		10V
C1604	1-135-214-21	TANTAL CHIP	4.7uF	20%	20V
C1605	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1608	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1615	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1616	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V

Ref No	Part No	Description			Remark
C1617	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1618	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1619	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1620	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1621	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1622	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1624	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1625	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C1626	1-164-346-11	CERAMIC CHIP	1uF		16V
C1628	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1629	1-115-156-11	CERAMIC CHIP	1uF		10V
C1630	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1631	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
					(TRV62/TRV72/TRV82/TRV94)
C1631	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
					(TRV54E/TRV56E/TRV64E/TRV94E)
C1635	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1637	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1638	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1639	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1640	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1641	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1642	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C1643	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1644	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1645	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C1646	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C1647	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1701	1-115-156-11	CERAMIC CHIP	1uF		10V
C1702	1-115-156-11	CERAMIC CHIP	1uF		10V
C1752	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1753	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1754	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1755	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C1756	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C1757	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C1758	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C1760	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1761	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C1762	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C1763	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V
C1764	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C1765	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C1767	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C1768	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1769	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1770	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1771	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1772	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1776	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1777	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1779	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1851	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1852	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1853	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1854	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1855	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1856	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1857	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1858	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1859	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1860	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1861	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1862	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1863	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1864	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C1865	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1866	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1867	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1868	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1869	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1870	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1871	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1872	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1873	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1874	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1875	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1876	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1877	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1878	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1879	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1880	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1882	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1884	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1886	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1887	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1888	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1951	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C1952	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1953	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1954	1-115-156-11	CERAMIC CHIP	1uF		10V
C1955	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1957	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C1958	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1959	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1960	1-115-156-11	CERAMIC CHIP	1uF		10V
C1965	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1968	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1971	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1974	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1976	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C1978	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1980	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1981	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1982	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1986	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1987	1-104-851-11	TANTAL CHIP	10uF	20%	10V
C1989	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1990	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1991	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2051	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
					(TRV72/TRV82/TRV94/TRV94E)
C2052	1-164-156-11	CERAMIC CHIP	0.1uF		25V
					(TRV72/TRV82/TRV94/TRV94E)
C2054	1-164-156-11	CERAMIC CHIP	0.1uF		25V
					(TRV72/TRV82/TRV94/TRV94E)

Ref. No.	Part No.	Description	Remark
C2055	1-164-156-11	CERAMIC CHIP 0 1uF	25V (TRV72/TRV82/TRV94/TRV94E)
C2056	1-164-156-11	CERAMIC CHIP 0 1uF	25V (TRV72/TRV82/TRV94/TRV94E)
C2057	1-164-156-11	CERAMIC CHIP 0 1uF	25V (TRV72/TRV82/TRV94/TRV94E)
		< CONNECTOR >	
CN101	1-766-677-21	CONNECTOR, FFC/FPC 16P	
CN102	1-774-639-21	CONNECTOR, FFC/FPC 15P	
CN103	1-766-673-21	CONNECTOR, FFC/FPC 12P	
CN104	1-766-340-21	CONNECTOR, FFC/FPC 10P	
CN105	1-766-619-11	1ONNECTOR, FFC/FPC 8P	
CN106	1-691-542-21	CONNECTOR, BOARD TO BOARD 48P	
CN111	1-779-334-11	CONNECTOR, FFC/FPC 20P	
CN112	1-779-332-11	CONNECTOR, FFC/FPC 16P	
CN113	1-691-361-11	CONNECTOR, FFC/FPC (ZIF) 23P	
CN202	1-774-637-11	CONNECTOR, FFC/FPC 13P	
CN204	1-778-075-11	CONNECTOR, BOARD TO BOARD 70P	(TRV54E/TRV94/TRV94E)
CN205	1-766-340-21	CONNECTOR, FFC/FPC 10P	
CN207	1-766-677-21	CONNECTOR, FFC/FPC 16P	
CN208	1-573-935-11	CONNECTOR, FFC/FPC (ZIF) 26P	
CN1350	1-766-654-21	CONNECTOR, FFC/FPC 18P	
CN1950	1-764-534-21	CONNECTOR, FFC/FPC (ZIF) 28P	
CN1951	1-766-677-21	CONNECTOR, FFC/FPC 16P	
CN1953	1-764-534-21	CONNECTOR, FFC/FPC (ZIF) 28P	
		< DIODE >	
D1201	8-719-055-86	DIODE KV1470TL1-3	
D1202	8-719-055-86	DIODE KV1470TL1-3	
D1305	8-719-404-49	DIODE MA111 (TRV62/TRV72/TRV82/TRV94)	
D1306	8-719-404-49	DIODE MA111 (TRV62/TRV72/TRV82/TRV94)	
D1350	8-719-404-49	DIODE MA111	(TRV54E/TRV56E/TRV62/TRV64E)
D1351	8-719-404-49	DIODE MA111	(TRV54E/TRV56E/TRV62/TRV64E)
D1352	8-719-404-49	DIODE MA111	(TRV54E/TRV56E/TRV62/TRV64E)
D1353	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D1601	8-719-404-49	DIODE MA111	
D1602	8-713-102-28	DIODE 1T379-04-T8A	
D1951	8-719-404-49	DIODE MA111	
D1952	8-719-404-49	DIODE MA111	
D1953	8-719-404-49	DIODE MA111	
D1954	8-719-049-09	DIODE 1SS367-T3SONY	
D1955	8-719-049-09	DIODE 1SS367-T3SONY	
D1956	8-719-421-27	DIODE MA728	
D1957	8-719-404-49	DIODE MA111	
D1958	8-719-049-09	DIODE 1SS367-T3SONY	
D2051	8-719-404-49	DIODE MA111 (TRV72/TRV82/TRV94/TRV94E)	
D2052	8-719-404-49	DIODE MA111 (TRV72/TRV82/TRV94/TRV94E)	
		< FERRITE BEAD >	
FB251	1-414-228-11	INDUCTOR, FERRITE BEAD	
FB1151	1-500-284-21	INDUCTOR, FERRITE BEAD	
FB1601	1-414-228-11	INDUCTOR, FERRITE BEAD	(TRV62/TRV72/TRV82/TRV94)

Ref. No	Part No	Description	Remark
FB1602	1-414-228-11	INDUCTOR, FERRITE BEAD	
FB1603	1-500-284-21	INDUCTOR, FERRITE BEAD	
FB1604	1-500-284-21	INDUCTOR, FERRITE BEAD	
FB1605	1-500-284-21	INDUCTOR, FERRITE BEAD	
FB1701	1-414-228-11	INDUCTOR, FERRITE BEAD	
FB1702	1-414-228-11	INDUCTOR, FERRITE BEAD	
		< IC >	
IC101	8-752-071-15	IC CXA1702AR-T6	
IC102	8-759-447-79	IC MB87B121PFV-G-BND-ER	
IC103	8-759-438-69	IC MB40C218PFQ-G-BND-ER	
IC104	8-759-454-36	IC uPD6466GS-622-GLG-E2	
IC105	8-759-457-06	IC M65510FP-600D	
IC106	8-759-457-05	IC HG51D306TETL	
IC108	8-759-169-02	IC MB88344BPFV-G-BND-ER	
IC109	8-752-079-31	IC CXA1737R-T6	
IC114	8-752-380-60	IC CXD3111R-T6 (TRV54E/TRV56E)	
IC114	8-752-386-05	IC CXD3119R-T6 (EXCEPT TRV54E/TRV56E)	
IC115	8-759-460-40	IC HG51D318TETL	
IC116	8-759-445-94	IC AK6480AM-E2	
IC117	8-752-879-54	IC CXP913040-001R-T6	
IC119	8-759-058-62	IC TC7S08FU(TE85R)	
IC120	8-759-356-30	IC XR1083ACQ-E2	
IC121	8-759-327-67	IC LB1950V-TLM	
IC122	8-759-327-61	IC LB8112V-TLM	(TRV62/TRV72/TRV82/TRV94)
IC122	8-759-327-62	IC TA8482FN-EL	(TRV54E/TRV56E/TRV64E/TRV94E)
IC129	8-752-078-82	IC CXA2030R-T6	
IC130	8-759-058-58	IC TC7S04FU(TE85R)	(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
IC202	8-752-384-74	IC CXD2486R-T4	
IC203	8-759-462-43	IC AD9800JCSTRL	
IC251	8-759-075-97	IC LM358PW	
IC252	8-759-365-18	IC uPD16833G3-E2	
IC253	8-759-337-41	IC NJM2902V(TE2)	
IC255	8-752-377-38	IC CXD2430N	
IC800	8-752-384-33	IC CXD3121R-T4	(TRV72/TRV82/TRV94/TRV94E)
IC1951	8-759-298-10	IC S-8423NFS-T2	
IC1952	8-759-454-37	IC S579201PZ-TEB	(TRV54E/TRV56E/TRV62/TRV72/TRV94/TRV94E E,HK,JE)
IC1952	8-759-467-72	IC S579C11PZ-TEB	(TRV64E/TRV82/TRV94E AEP,UK)
IC1995	8-759-059-05	IC TL1596CPW	
		< COIL >	
L252	1-414-754-11	INDUCTOR 10uH	
L253	1-414-398-11	INDUCTOR 10uH	
L1002	1-414-406-11	INDUCTOR 220uH	
L1003	1-412-951-11	INDUCTOR 10uH	
L1004	1-414-406-11	INDUCTOR 220uH	
L1005	1-414-398-11	INDUCTOR 10uH	
L1006	1-412-948-11	INDUCTOR 5 6uH	
L1007	1-410-656-11	INDUCTOR CHIP 150uH	
L1008	1-412-963-11	INDUCTOR 100uH	
L1009	1-412-282-41	INDUCTOR 470uH	

Ref No	Part No	Description	Remark
L1010	1-412-957-11	INDUCTOR 33uH	
L1011	1-412-280-31	INDUCTOR 330uH	
L1012	1-410-657-21	INDUCTOR CHIP 180uH	
L1013	1-410-656-11	INDUCTOR CHIP 150uH	
L1014	1-412-956-21	INDUCTOR 27uH	(EXCEPT TRV54E/TRV56E)
L1015	1-412-280-31	INDUCTOR 330uH	
L1017	1-412-949-21	INDUCTOR 6.8uH	
L1018	1-412-951-11	INDUCTOR 10uH	(EXCEPT TRV54E/TRV56E)
L1019	1-410-998-31	INDUCTOR CHIP 2.7uH	(TRV54E/TRV56E/TRV64E/TRV82/TRV94/TRV94E)
L1019	1-412-944-11	INDUCTOR 2.7uH	(TRV62/TRV72)
L1020	1-414-754-11	INDUCTOR 10uH	
L1141	1-414-754-11	INDUCTOR 10uH	
L1151	1-414-754-11	INDUCTOR 10uH	
L1154	1-414-754-11	INDUCTOR 10uH	
L1201	1-414-754-11	INDUCTOR 10uH	
L1202	1-414-754-11	INDUCTOR 10uH	
L1203	1-414-754-11	INDUCTOR 10uH	
L1204	1-412-945-11	INDUCTOR 3.3uH	
L1206	1-414-754-11	INDUCTOR 10uH	
L1207	1-414-078-11	INDUCTOR 10uH	
L1209	1-414-754-11	INDUCTOR 10uH	
L1220	1-412-955-11	INDUCTOR 22uH	
L1301	1-414-754-11	INDUCTOR 10uH	
L1303	1-412-937-11	INDUCTOR 0.68uH	(TRV54E/TRV56E/TRV64E CH/TRV94E E,HK,JE)
L1303	1-412-939-11	INDUCTOR 1uH	(TRV62/TRV72/TRV82/TRV94)
L1305	1-414-754-11	INDUCTOR 10uH	
L1306	1-414-754-11	INDUCTOR 10uH	
L1307	1-414-754-11	INDUCTOR 10uH	
L1308	1-412-959-11	INDUCTOR 47uH	(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
L1310	1-414-754-11	INDUCTOR 10uH	
L1603	1-414-398-11	INDUCTOR 10uH	
L1604	1-412-955-11	INDUCTOR 22uH	
L1751	1-414-754-11	INDUCTOR 10uH	
L1752	1-414-754-11	INDUCTOR 10uH	
L1753	1-414-754-11	INDUCTOR 10uH	
L1754	1-412-961-11	INDUCTOR 68uH	
L1870	1-414-396-21	INDUCTOR 4.7uH	
L1951	1-414-754-11	INDUCTOR 10uH	
L2051	1-414-754-11	INDUCTOR 10uH	(TRV72/TRV82/TRV94/TRV94E)

< TRANSISTOR >

Ref No	Part No	Description	Remark
Q251	8-729-425-64	TRANSISTOR 2SD2216Q	
Q252	8-729-425-64	TRANSISTOR 2SD2216Q	
Q253	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1001	8-729-031-69	TRANSISTOR 2SA1965-TL	
Q1002	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1003	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1004	8-729-031-69	TRANSISTOR 2SA1965-TL	(TRV62/TRV72/TRV82/TRV94)
Q1005	8-729-031-69	TRANSISTOR 2SA1965-TL	(TRV62/TRV72/TRV82/TRV94)
Q1006	8-729-031-69	TRANSISTOR 2SA1965-TL	(TRV62/TRV72/TRV82/TRV94)
Q1007	8-729-031-69	TRANSISTOR 2SA1965-TL	(TRV62/TRV72/TRV82/TRV94)
Q1008	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1009	8-729-429-18	TRANSISTOR UN9213	(TRV62/TRV72/TRV82/TRV94)
Q1010	8-729-429-18	TRANSISTOR UN9213	(TRV62/TRV72/TRV82/TRV94)
Q1011	8-729-429-18	TRANSISTOR UN9213	(TRV62/TRV72/TRV82/TRV94)
Q1012	8-729-429-18	TRANSISTOR UN9213	(TRV62/TRV72/TRV82/TRV94)
Q1013	8-729-429-18	TRANSISTOR UN9213	
Q1014	8-729-429-18	TRANSISTOR UN9213	(TRV94/TRV94E)
Q1015	8-729-429-18	TRANSISTOR UN9213	
Q1016	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1018	8-729-429-18	TRANSISTOR UN9213	(TRV54E/TRV56E/TRV64E/TRV94E)
Q1025	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1026	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1028	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1029	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1030	8-729-037-89	TRANSISTOR 2SC4627J-C(TX) SO	(EXCEPT TRV54E/TRV56E)
Q1033	8-729-425-50	TRANSISTOR 2SB1462Q	(EXCEPT TRV54E/TRV56E)
Q1034	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1036	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1037	8-729-037-89	TRANSISTOR 2SC4627J-C(TX) SO	
Q1038	8-729-429-18	TRANSISTOR UN9213	
Q1039	8-729-429-18	TRANSISTOR UN9213	(TRV62/TRV72/TRV82/TRV94)
Q1040	8-729-429-18	TRANSISTOR UN9213	(EXCEPT TRV54E/TRV56E)
Q1041	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1043	8-729-807-86	TRANSISTOR 2SB1295-UL5	
Q1044	8-729-429-18	TRANSISTOR UN9213	
Q1045	8-729-429-18	TRANSISTOR UN9213	
Q1100	8-729-031-69	TRANSISTOR 2SA1965-TL	(TRV62/TRV72/TRV82/TRV94)
Q1135	8-729-037-89	TRANSISTOR 2SC4627J-C(TX) SO	(EXCEPT TRV54E/TRV56E)
Q1136	8-729-429-18	TRANSISTOR UN9213	
Q1138	8-729-429-18	TRANSISTOR UN9213	(TRV94/TRV94E)
Q1139	8-729-031-69	TRANSISTOR 2SA1965-TL	
Q1140	8-729-429-18	TRANSISTOR UN9213	(EXCEPT TRV54E/TRV56E)
Q1141	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1150	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1201	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1202	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1203	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1220	8-729-429-18	TRANSISTOR UN9213	
Q1221	8-729-429-18	TRANSISTOR UN9213	(TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
Q1305	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1350	8-729-428-88	TRANSISTOR UN9113	
Q1351	8-729-425-64	TRANSISTOR 2SD2216Q	(TRV62/TRV72/TRV82/TRV94)

Ref No	Part No	Description	Remark
Q1352	8-729-015-66	TRANSISTOR 2SC4919-TL	
Q1353	8-729-425-64	TRANSISTOR 2SD2216Q	(TRV62/TRV72/TRV82/TRV94)
Q1354	8-729-015-66	TRANSISTOR 2SC4919-TL	(EXCEPT TRV54E/TRV56E)
Q1355	8-729-015-66	TRANSISTOR 2SC4919-TL	(EXCEPT TRV54E/TRV56E)
Q1356	8-729-425-50	TRANSISTOR 2SB1462Q	(TRV62/TRV72/TRV82/TRV94)
Q1357	8-729-425-50	TRANSISTOR 2SB1462Q	(TRV62/TRV72/TRV82/TRV94)
Q1488	8-729-013-84	TRANSISTOR RN2111-TE85L	
Q1489	8-729-013-60	TRANSISTOR RN1110-TE85L	
Q1490	8-729-013-60	TRANSISTOR RN1110-TE85L	
Q1491	8-729-429-50	TRANSISTOR XP4312	
Q1492	8-729-429-50	TRANSISTOR XP4312	
Q1493	8-729-428-88	TRANSISTOR UN9113	
Q1494	8-729-429-18	TRANSISTOR UN9213	
Q1601	8-729-429-18	TRANSISTOR UN9213	
Q1602	8-729-428-88	TRANSISTOR UN9113	
Q1603	8-729-428-88	TRANSISTOR UN9113	
Q1604	8-729-429-18	TRANSISTOR UN9213	
Q1605	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1751	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1851	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1852	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1854	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1951	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1952	8-729-040-77	TRANSISTOR 2SC5376-B(TE85L)	
Q1953	8-729-425-64	TRANSISTOR 2SD2216Q	
Q1954	8-729-032-00	TRANSISTOR 2SJ381-TD	
Q1955	8-729-037-72	TRANSISTOR UN9211J-(TX) SO	
Q1956	8-729-425-50	TRANSISTOR 2SB1462Q	
Q1958	8-729-037-72	TRANSISTOR UN9211J-(TX) SO	(TRV54E/TRV56E/TRV62/TRV64E)
Q1959	8-729-032-62	TRANSISTOR 2SJ347-TE85L	
Q1963	8-729-024-48	TRANSISTOR 2SK1830-TE85L	
Q2051	8-729-425-50	TRANSISTOR 2SB1462Q	(TRV72/TRV82/TRV94/TRV94E)
Q2052	8-729-425-50	TRANSISTOR 2SB1462Q	(TRV72/TRV82/TRV94/TRV94E)
Q2053	8-729-425-50	TRANSISTOR 2SB1462Q	(TRV72/TRV82/TRV94/TRV94E)
		< RESISTOR >	
R251	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R252	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R253	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R254	1-216-001-00	METAL CHIP 10 5% 1/10W	
R255	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R256	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R257	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R258	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R259	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R260	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R261	1-216-815-11	METAL CHIP 330 5% 1/16W	
R262	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R263	1-216-848-11	METAL CHIP 180K 5% 1/16W	

Ref No.	Part No.	Description	Remark
R264	1-216-848-11	METAL CHIP 180K 5%	1/16W
R265	1-216-836-11	METAL CHIP 18K 5%	1/16W
R266	1-216-823-11	METAL CHIP 1.5K 5%	1/16W
R267	1-216-821-11	METAL CHIP 1K 5%	1/16W
R269	1-216-841-11	METAL CHIP 47K 5%	1/16W
R270	1-216-843-11	METAL CHIP 68K 5%	1/16W
R271	1-216-845-11	METAL CHIP 100K 5%	1/16W
R272	1-216-848-11	METAL CHIP 180K 5%	1/16W
R273	1-216-843-11	METAL CHIP 68K 5%	1/16W
R275	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R294	1-216-864-11	METAL CHIP 0 5%	1/16W
R300	1-216-864-11	METAL CHIP 0 5%	1/16W
R302	1-216-864-11	METAL CHIP 0 5%	1/16W
R303	1-216-864-11	METAL CHIP 0 5%	1/16W
R705	1-216-837-11	METAL CHIP 22K 5%	1/16W (TRV94E AEP,UK)
R705	1-216-841-11	METAL CHIP 47K 5%	1/16W (TRV94E E,HK,JE)
R705	1-216-842-11	METAL CHIP 56K 5%	1/16W (TRV94)
R705	1-216-843-11	METAL CHIP 68K 5%	1/16W (TRV72/TRV82)
R705	1-216-845-11	METAL CHIP 100K 5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E CH)
R706	1-216-837-11	METAL CHIP 22K 5%	1/16W (TRV62/TRV64E CH)
R706	1-216-842-11	METAL CHIP 56K 5%	1/16W (TRV72/TRV82)
R706	1-216-841-11	METAL CHIP 47K 5%	1/16W (TRV54E/TRV56E)
R706	1-216-843-11	METAL CHIP 68K 5%	1/16W (TRV94)
R706	1-216-845-11	METAL CHIP 100K 5%	1/16W (TRV94E)
R706	1-216-864-11	METAL CHIP 0 5%	1/16W (TRV64E AEP,EE,NE,RU,UK)
R1001	1-216-818-11	METAL CHIP 560 5%	1/16W
R1002	1-216-803-11	METAL CHIP 33 5%	1/16W (TRV54E/TRV56E/TRV64E/TRV94E)
R1002	1-216-804-11	METAL CHIP 39 5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1003	1-216-807-11	METAL CHIP 68 5%	1/16W
R1004	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1005	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1006	1-216-813-11	METAL CHIP 220 5%	1/16W
R1007	1-216-814-11	METAL CHIP 270 5%	1/16W
R1008	1-216-828-11	METAL CHIP 3.9K 5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1009	1-216-839-11	METAL CHIP 33K 5%	1/16W
R1010	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1011	1-216-828-11	METAL CHIP 3.9K 5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1012	1-216-828-11	METAL CHIP 3.9K 5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1013	1-216-828-11	METAL CHIP 3.9K 5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1014	1-216-837-11	METAL CHIP 22K 5%	1/16W

Ref. No	Part No	Description				Remark
R1017	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1018	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1019	1-216-829-11	METAL CHIP	4 7K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1020	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R1022	1-216-828-11	METAL CHIP	3 9K	5%	1/16W	
R1023	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1024	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1025	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R1027	1-216-828-11	METAL CHIP	3 9K	5%	1/16W	
R1028	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R1030	1-216-828-11	METAL CHIP	3 9K	5%	1/16W	
R1031	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R1033	1-216-828-11	METAL CHIP	3 9K	5%	1/16W	
R1034	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1035	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1037	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1038	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1039	1-216-797-11	METAL CHIP	10	5%	1/16W	
R1040	1-218-875-11	METAL GLAZE	15K	0 50%	1/16W	
R1041	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R1042	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1044	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV94/TRV94E)
R1045	1-216-828-11	METAL CHIP	3 9K	5%	1/16W	
R1046	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1048	1-216-832-11	METAL CHIP	8 2K	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
R1051	1-216-835-11	METAL CHIP	15K	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
R1051	1-216-837-11	METAL CHIP	22K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1052	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1053	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
R1054	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1057	1-216-829-11	METAL CHIP	4 7K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1057	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
R1061	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R1062	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R1076	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1081	1-216-825-11	METAL CHIP	2 2K	5%	1/16W	
R1082	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R1083	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1084	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R1085	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R1086	1-216-818-11	METAL CHIP	560	5%	1/16W	
R1087	1-216-823-11	METAL CHIP	1 5K	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
R1087	1-216-825-11	METAL CHIP	2 2K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1088	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1089	1-216-829-11	METAL CHIP	4 7K	5%	1/16W	
R1090	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1097	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1098	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1100	1-216-816-11	METAL CHIP	390	5%	1/16W	
R1101	1-216-820-11	METAL CHIP	820	5%	1/16W	
R1102	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV54E/TRV56E)
R1103	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1103	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV64E/TRV94E)
R1104	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1104	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV64E/TRV94E)
R1105	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R1106	1-216-816-11	METAL CHIP	390	5%	1/16W	
R1107	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1110	1-216-805-11	METAL CHIP	47	5%	1/16W	
R1111	1-216-826-11	METAL CHIP	2 7K	5%	1/16W	
R1112	1-216-821-11	METAL CHIP	1K	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1114	1-216-815-11	METAL CHIP	330	5%	1/16W	
R1115	1-216-817-11	METAL CHIP	470	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1116	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV64E/TRV94E)
R1116	1-216-818-11	METAL CHIP	560	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1117	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1117	1-216-816-11	METAL CHIP	390	5%	1/16W	(TRV64E/TRV94E)
R1118	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1119	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1120	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1121	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1122	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R1123	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R1124	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R1125	1-216-815-11	METAL CHIP	330	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1128	1-216-811-11	METAL CHIP	150	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1129	1-216-809-11	METAL CHIP	100	5%	1/16W	
R1131	1-216-828-11	METAL CHIP	3 9K	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1134	1-216-823-11	METAL CHIP	1 5K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1134	1-216-825-11	METAL CHIP	2 2K	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
R1135	1-216-814-11	METAL CHIP	270	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1135	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
R1136	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1137	1-216-829-11	METAL CHIP	4 7K	5%	1/16W	
R1138	1-216-829-11	METAL CHIP	4 7K	5%	1/16W	
R1142	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV64E/TRV94E)
R1142	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1143	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)

Ref No	Part No	Description			Remark
R1144	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1146	1-216-818-11	METAL CHIP	560	5%	1/16W
R1147	1-216-820-11	METAL CHIP	820	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1147	1-216-864-11	METAL CHIP	0	5%	1/16W (TRV64E/TRV94E)
R1148	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1149	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1150	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1151	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1152	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R1153	1-216-816-11	METAL CHIP	390	5%	1/16W
R1154	1-216-834-11	METAL CHIP	12K	5%	1/16W
R1155	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R1156	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R1157	1-216-808-11	METAL CHIP	82	5%	1/16W
R1158	1-216-864-11	METAL CHIP	0	5%	1/16W
R1161	1-216-864-11	METAL CHIP	0	5%	1/16W
R1162	1-216-834-11	METAL CHIP	12K	5%	1/16W
R1163	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R1164	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1165	1-216-809-11	METAL CHIP	100	5%	1/16W
R1213	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R1215	1-216-809-11	METAL CHIP	100	5%	1/16W
R1216	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1217	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1218	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1219	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R1221	1-216-818-11	METAL CHIP	560	5%	1/16W
R1222	1-216-820-11	METAL CHIP	820	5%	1/16W
R1223	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1225	1-216-819-11	METAL CHIP	680	5%	1/16W
R1227	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1228	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1230	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1231	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1232	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1233	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R1234	1-216-840-11	METAL CHIP	39K	5%	1/16W
R1236	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1237	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1238	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1239	1-216-864-11	METAL CHIP	0	5%	1/16W
R1240	1-216-809-11	METAL CHIP	100	5%	1/16W (TRV72/TRV82/TRV94E AEP,UK)
R1240	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E/TRV94/TRV94E E,HK,JE)
R1241	1-216-809-11	METAL CHIP	100	5%	1/16W (TRV72/TRV82/TRV94E.AEP,UK)
R1241	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E/TRV94/TRV94E E,HK,JE)
R1242	1-216-809-11	METAL CHIP	100	5%	1/16W (TRV72/TRV82/TRV94E AEP,UK)
R1242	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E/TRV94/TRV94E E,HK,JE)
R1246	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1247	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1248	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1249	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1250	1-216-864-11	METAL CHIP	0	5%	1/16W
R1251	1-216-818-11	METAL CHIP	560	5%	1/16W
R1252	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1253	1-216-818-11	METAL CHIP	560	5%	1/16W
R1254	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R1255	1-216-817-11	METAL CHIP	470	5%	1/16W
R1256	1-216-816-11	METAL CHIP	390	5%	1/16W
R1280	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1281	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R1283	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
R1283	1-216-864-11	METAL CHIP	0	5%	1/16W (TRV64E AEP,EE,NE,RU,UK/TRV94E AEP,UK)
R1284	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
R1285	1-216-857-11	METAL CHIP	1M	5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
R1285	1-216-864-11	METAL CHIP	0	5%	1/16W (TRV64E AEP,EE,NE,RU,UK/TRV94E AEP,UK)
R1287	1-216-864-11	METAL CHIP	0	5%	1/16W (EXCEPT TRV94/TRV94E)
R1289	1-216-864-11	METAL CHIP	0	5%	1/16W
R1290	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1292	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1293	1-216-864-11	METAL CHIP	0	5%	1/16W
R1295	1-216-817-11	METAL CHIP	470	5%	1/16W
R1297	1-216-864-11	METAL CHIP	0	5%	1/16W
R1298	1-216-864-11	METAL CHIP	0	5%	1/16W
R1307	1-216-836-11	METAL CHIP	18K	5%	1/16W (TRV54E/TRV56E/TRV64E/TRV94E)
R1307	1-216-837-11	METAL CHIP	22K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1308	1-216-837-11	METAL CHIP	22K	5%	1/16W (TRV54E/TRV56E/TRV62/TRV64E CH/TRV72/TRV82/TRV94/TRV94E E,HK,JE)
R1312	1-216-834-11	METAL CHIP	12K	5%	1/16W
R1313	1-216-821-11	METAL CHIP	1K	5%	1/16W (EXCEPT TRV54E/TRV56E)
R1314	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1315	1-216-815-11	METAL CHIP	330	5%	1/16W (EXCEPT TRV54E/TRV56E)
R1316	1-216-815-11	METAL CHIP	330	5%	1/16W
R1321	1-218-876-11	METAL GLAZE	16K	0.50%	1/16W
R1322	1-218-847-11	METAL GLAZE	1K	0.50%	1/16W
R1323	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R1324	1-216-834-11	METAL CHIP	12K	5%	1/16W
R1330	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R1331	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1332	1-216-864-11	METAL CHIP	0	5%	1/16W (TRV54E/TRV56E/TRV64E CH/TRV94E E,HK,JE)
R1350	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1351	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1352	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R1353	1-216-837-11	METAL CHIP	22K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1354	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)

Ref No	Part No	Description				Remark
R1355	1-216-822-11	METAL CHIP	1 2K	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1356	1-216-847-11	METAL CHIP	150K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1357	1-216-822-11	METAL CHIP	1 2K	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1358	1-216-845-11	METAL CHIP	100K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1360	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1361	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1362	1-216-804-11	METAL CHIP	39	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1363	1-216-803-11	METAL CHIP	33	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1364	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1365	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV62/TRV72/TRV82/TRV94)
R1366	1-216-803-11	METAL CHIP	33	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1367	1-216-804-11	METAL CHIP	39	5%	1/16W	(EXCEPT TRV54E/TRV56E)
R1368	1-216-803-11	METAL CHIP	33	5%	1/16W	
R1369	1-216-804-11	METAL CHIP	39	5%	1/16W	
R1370	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV54E/TRV56E/TRV62/TRV64E)
R1374	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV72/TRV82/TRV94/TRV94E)
R1377	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV72/TRV82/TRV94/TRV94E)
R1380	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV54E/TRV56E/TRV62/TRV64E)
R1381	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV54E/TRV56E/TRV62/TRV64E)
R1383	1-216-832-11	METAL CHIP	8 2K	5%	1/16W	(TRV54E/TRV56E/TRV62/TRV64E)
R1390	1-216-825-11	METAL CHIP	2 2K	5%	1/16W	
R1391	1-216-825-11	METAL CHIP	2 2K	5%	1/16W	
R1403	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R1404	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R1406	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R1408	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R1409	1-216-820-11	METAL CHIP	820	5%	1/16W	
R1410	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1418	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R1419	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1421	1-216-823-11	METAL CHIP	1 5K	5%	1/16W	
R1422	1-216-854-11	METAL CHIP	560K	5%	1/16W	
R1423	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R1424	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1425	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R1426	1-216-823-11	METAL CHIP	1 5K	5%	1/16W	
R1461	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1462	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1476	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1488	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R1489	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1490	1-216-817-11	METAL CHIP	470	5%	1/16W	

Ref No	Part No	Description				Remark
R1491	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1492	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1601	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R1603	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R1616	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R1620	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1621	1-216-798-11	METAL GLAZE	12	5%	1/16W	
R1622	1-216-798-11	METAL GLAZE	12	5%	1/16W	
R1628	1-216-809-11	METAL CHIP	100	5%	1/16W	
R1629	1-216-809-11	METAL CHIP	100	5%	1/16W	
R1630	1-216-809-11	METAL CHIP	100	5%	1/16W	
R1632	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R1636	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1638	1-216-825-11	METAL CHIP	2 2K	5%	1/16W	
R1639	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1642	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV54E/TRV56E/TRV64E/TRV94E)
R1701	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1702	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1703	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1704	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1705	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1706	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1707	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1708	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1709	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1710	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1711	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1712	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1713	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1714	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1715	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1732	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT TRV54E/TRV94/TRV94E)
R1751	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R1752	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R1755	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R1756	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R1757	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R1762	1-216-829-11	METAL CHIP	4 7K	5%	1/16W	
R1763	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1772	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R1773	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R1774	1-218-847-11	METAL GLAZE	1K	0 50%	1/16W	
R1775	1-216-841-11	METAL CHIP	47K	5%	1/16W	

Ref No.	Part No.	Description			Remark
R1776	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1778	1-216-864-11	METAL CHIP	0	5%	1/16W
R1779	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1780	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1781	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1782	1-216-864-11	METAL CHIP	0	5%	1/16W
R1783	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1784	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1785	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1786	1-216-864-11	METAL CHIP	0	5%	1/16W
R1787	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1790	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1792	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1793	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1794	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1795	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1796	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1798	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1801	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1803	1-216-829-11	METAL CHIP	4 7K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1803	1-216-832-11	METAL CHIP	8 2K	5%	1/16W (TRV54E/TRV56E/TRV64E/TRV94E)
R1804	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1805	1-216-856-11	METAL CHIP	820K	5%	1/16W
R1806	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1808	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1809	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1810	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R1811	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R1812	1-216-839-11	METAL CHIP	33K	5%	1/16W
R1813	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1814	1-216-864-11	METAL CHIP	0	5%	1/16W
R1815	1-216-864-11	METAL CHIP	0	5%	1/16W
R1819	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1820	1-216-843-11	METAL CHIP	68K	5%	1/16W
R1821	1-216-864-11	METAL CHIP	0	5%	1/16W
R1822	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1823	1-216-845-11	METAL CHIP	100K	5%	1/16W (TRV54E/TRV62/TRV64E/TRV72)
R1826	1-216-837-11	METAL CHIP	22K	5%	1/16W (TRV54E/TRV62/TRV72)
R1826	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV64E)
R1826	1-216-845-11	METAL CHIP	100K	5%	1/16W (TRV56E/TRV82/TRV94/TRV94E)
R1827	1-216-839-11	METAL CHIP	33K	5%	1/16W
R1836	1-216-864-11	METAL CHIP	0	5%	1/16W
R1851	1-217-671-11	METAL CHIP	1	5%	1/10W
R1852	1-217-671-11	METAL CHIP	1	5%	1/10W
R1853	1-217-671-11	METAL CHIP	1	5%	1/10W
R1855	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1856	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1857	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1859	1-216-864-11	METAL CHIP	0	5%	1/16W
R1860	1-216-864-11	METAL CHIP	0	5%	1/16W
R1861	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1862	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1863	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1865	1-216-851-11	METAL CHIP	330K	5%	1/16W
R1867	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1868	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1869	1-216-023-00	METAL CHIP	82	5%	1/10W
R1872	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1873	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1874	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R1875	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1876	1-216-819-11	METAL CHIP	680	5%	1/16W (TRV54E/TRV56E/TRV64E/TRV94E)
R1876	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1877	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1878	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1878	1-216-837-11	METAL CHIP	22K	5%	1/16W (TRV54E/TRV56E/TRV64E/TRV94E)
R1880	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1881	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1882	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1883	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1884	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1887	1-216-830-11	METAL CHIP	5 6K	5%	1/16W (TRV54E/TRV56E/TRV64E/TRV94E)
R1887	1-216-833-11	METAL CHIP	10K	5%	1/16W (TRV62/TRV72/TRV82/TRV94)
R1888	1-216-836-11	METAL CHIP	18K	5%	1/16W
R1889	1-217-671-11	METAL CHIP	1	5%	1/10W
R1890	1-217-671-11	METAL CHIP	1	5%	1/10W
R1891	1-216-827-11	METAL CHIP	3 3K	5%	1/16W
R1892	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1893	1-216-817-11	METAL CHIP	470	5%	1/16W
R1894	1-216-817-11	METAL CHIP	470	5%	1/16W
R1896	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R1897	1-216-808-11	METAL CHIP	82	5%	1/16W
R1898	1-216-864-11	METAL CHIP	0	5%	1/16W
R1953	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R1954	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1955	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1956	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1957	1-216-813-11	METAL CHIP	220	5%	1/16W
R1958	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1961	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1962	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1963	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1964	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1965	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1966	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1967	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1969	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1970	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1971	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1972	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1973	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1976	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1977	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1979	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1980	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R1982	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1986	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1991	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2001	1-216-821-11	METAL CHIP	1K	5%	1/16W
R2010	1-216-819-11	METAL CHIP	680	5%	1/16W
					(TRV54E/TRV56E/TRV62/TRV64E)
R2011	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2012	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2015	1-219-570-11	METAL GLAZE	10M	5%	1/16W
R2017	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2020	1-216-845-11	METAL CHIP	100K	5%	1/16W
R2021	1-216-849-11	METAL CHIP	220K	5%	1/16W
R2022	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2023	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2024	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2026	1-216-845-11	METAL CHIP	100K	5%	1/16W
R2029	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2031	1-216-817-11	METAL CHIP	470	5%	1/16W
R2036	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2037	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2038	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2044	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2046	1-216-845-11	METAL CHIP	100K	5%	1/16W
R2047	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2048	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2049	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R2051	1-216-835-11	METAL CHIP	15K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2056	1-216-835-11	METAL CHIP	15K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2058	1-216-835-11	METAL CHIP	15K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2060	1-216-821-11	METAL CHIP	1K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2061	1-216-821-11	METAL CHIP	1K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2062	1-216-821-11	METAL CHIP	1K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2063	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2064	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2065	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2070	1-217-671-11	METAL CHIP	1	5%	1/10W
					(TRV72/TRV82/TRV94/TRV94E)
R2071	1-217-671-11	METAL CHIP	1	5%	1/10W
					(TRV72/TRV82/TRV94/TRV94E)
R2074	1-216-864-11	METAL CHIP	0	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2076	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(TRV72/TRV82/TRV94/TRV94E)
R2151	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2152	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2154	1-216-853-11	METAL CHIP	470K	5%	1/16W
R2162	1-216-853-11	METAL CHIP	470K	5%	1/16W
		< THERMISTOR >			
TH1751	1-809-360-21	THERMISTOR, NTC (2125)			

Ref. No.	Part No.	Description			Remark
		< VIBRATOR >			
X1305	1-767-028-21	VIBRATOR, CRYSTAL (14.318182MHz)			
					(TRV62/TRV72/TRV82/TRV94)
X1305	1-767-029-21	VIBRATOR, CRYSTAL (17.734475MHz)			
					(TRV54E/TRV56E/TRV64E:CH/TRV94E:E,HK,JE)
X1601	1-760-320-11	VIBRATOR, CRYSTAL (28.6363MHz)			
					(TRV62/TRV72/TRV82/TRV94)
X1601	1-760-321-11	VIBRATOR, CRYSTAL (28.375MHz)			
					(TRV54E/TRV56E/TRV64E/TRV94E)
X1751	1-760-655-41	VIBRATOR, CRYSTAL (20MHz)			
X1752	1-767-030-21	VIBRATOR, CRYSTAL (11.895104MHz)			
					(TRV62/TRV72/TRV82/TRV94)
X1752	1-767-031-21	VIBRATOR, CRYSTAL (11.719MHz)			
					(TRV54E/TRV56E/TRV64E/TRV94E)
X1951	1-760-458-21	VIBRATOR, CRYSTAL (0.032798MHz)			
X1952	1-579-907-21	VIBRATOR, CERAMIC (20MHz)			

Ref. No.	Part No.	Description			Remark
	A-7056-774-A	VF-99 (HP) BOARD, COMPLETE			
		**************************			
					(TRV54E/TRV56E)
	A-7066-792-A	VF-99 (VHL4) BOARD, COMPLETE (TRV62)			
		***********************************			
					(Ref. No. 1,000 Series)
		< CAPACITOR >			
C901	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C902	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C903	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C904	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C905	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C906	1-162-638-11	CERAMIC CHIP	1uF		16V
C907	1-104-563-11	FILM CHIP	0.1uF	5%	16V
C908	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C909	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
⚠C910	1-164-758-11	CERAMIC CHIP	0.0039uF	5%	50V
⚠C911	1-164-715-11	CERAMIC CHIP	0.0068uF	5%	50V
C912	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C913	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C914	1-113-984-11	TANTAL. CHIP	1.5uF	20%	35V
C915	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C916	1-164-611-11	CERAMIC CHIP	0.001uF	10%	500V
		< CONNECTOR >			
CN901	1-573-506-41	CONNECTOR, FPC (NON ZIF) 4P			
CN902	1-580-057-11	PIN, CONNECTOR 4P			
		< DIODE >			
D901	8-719-951-21	DIODE PR1102W-TR			
D903	8-719-404-49	DIODE MA111			
		< IC >			
IC901	8-759-196-14	IC BA7149F-E2			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref No	Part No	Description			Remark
		< COIL >			
L901	1-412-031-11	INDUCTOR CHIP	47uH		
L902	1-410-387-11	INDUCTOR CHIP	33uH		
⚠L903	1-411-697-11	COIL, FERRITE (HLC)			
		< TRANSISTOR >			
Q901	8-729-230-63	TRANSISTOR	2SC4116-YG		
Q902	8-729-106-68	TRANSISTOR	2SD1615A-GP		
Q903	8-729-216-31	TRANSISTOR	2SA1163-G		
Q904	8-729-230-63	TRANSISTOR	2SC4116-YG		
		< RESISTOR >			
R901	1-216-817-11	METAL CHIP	470	5%	1/16W
R902	1-216-817-11	METAL CHIP	470	5%	1/16W
R903	1-216-057-00	METAL CHIP	2 2K	5%	1/10W
R904	1-216-833-11	METAL CHIP	10K	5%	1/16W
R905	1-216-822-11	METAL CHIP	1 2K	5%	1/16W
R906	1-216-813-11	METAL CHIP	220	5%	1/16W
R907	1-216-845-11	METAL CHIP	100K	5%	1/16W
R908	1-216-852-11	METAL CHIP	390K	5%	1/16W
R909	1-216-833-11	METAL CHIP	10K	5%	1/16W
R910	1-216-835-11	METAL CHIP	15K	5%	1/16W
R911	1-216-160-00	METAL GLAZE	27	5%	1/8W
R912	1-216-857-11	METAL CHIP	1M	5%	1/16W
R913	1-216-820-11	METAL CHIP	820	5%	1/16W
R914	1-216-813-11	METAL CHIP	220	5%	1/16W
R915	1-216-793-11	METAL GLAZE	4 7	5%	1/16W
R916	1-216-879-11	METAL GLAZE	22K	0 50%	1/16W (TRV62)
R916	1-218-881-11	METAL GLAZE	27K	0.50%	1/16W (TRV54E/TRV56E)
R917	1-218-891-11	METAL GLAZE	68K	0 50%	1/16W (TRV62)
R917	1-218-893-11	METAL GLAZE	82K	0 50%	1/16W (TRV54E/TRV56E)
R918	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R919	1-216-843-11	METAL CHIP	68K	5%	1/16W
R920	1-216-837-11	METAL CHIP	22K	5%	1/16W
R921	1-216-795-11	METAL GLAZE	6 8	5%	1/16W
R922	1-216-847-11	METAL CHIP	150K	5%	1/16W
R923	1-216-857-11	METAL CHIP	1M	5%	1/16W
R924	1-216-862-11	METAL GLAZE	2.7M	5%	1/16W
R925	1-216-862-11	METAL GLAZE	2 7M	5%	1/16W
R926	1-216-821-11	METAL CHIP	1K	5%	1/16W
R927	1-216-821-11	METAL CHIP	1K	5%	1/16W
R928	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R929	1-216-818-11	METAL CHIP	560	5%	1/16W
		< VARIABLE RESISTOR >			
RV903	1-238-852-11	RES, ADJ, CERMET 470			
RV904	1-223-566-11	RES, ADJ, METAL GLAZE 1M			
		< TRANSFORMER >			
⚠T901	1-453-124-11	TRANSFORMER ASSY, FLYBACK			

Ref No	Part No.	Description	Remark
		< THERMISTOR >	
TH901	1-809-350-21	THERMISTOR, NTC (2125)	
		< FLEXIBLE BOARD >	
⚠W901	1-540-019-21	SOCKET ASSY, CRT	

A-7073-078-A VF-102 (8P) BOARD, COMPLETE (TRV64E)
****
(Ref No 5,000 Series)

Ref No	Part No.	Description			Remark
		< CAPACITOR >			
C902	1-163-038-91	CERAMIC CHIP	0 1uF		25V
C903	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C904	1-162-965-11	CERAMIC CHIP	0 0015uF	10%	50V
C905	1-104-752-11	TANTAL CHIP	33uF	20%	6 3V
C906	1-162-638-11	CERAMIC CHIP	1uF		16V
C907	1-104-563-11	FILM CHIP	0 1uF	5%	16V
C908	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
⚠C910	1-164-756-11	CERAMIC CHIP	0 0033uF	5%	50V
⚠C911	1-164-713-11	CERAMIC CHIP	0 0056uF	5%	50V
C912	1-107-854-11	TANTAL CHIP	68uF	20%	6 3V
C914	1-128-007-11	ELECT CHIP	2 2uF	20%	35V
C915	1-163-037-11	CERAMIC CHIP	0 022uF	10%	25V
C916	1-164-611-11	CERAMIC CHIP	0 001uF	10%	500V
C919	1-126-245-11	ELECT	330uF	20%	6 3V
		< CONNECTOR >			
CN901	1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P			
CN902	1-573-290-21	PIN, CONNECTOR (1 5MM)(SMD) 4P			
		< DIODE >			
D901	8-719-951-21	DIODE	PR1102W-TR		
D902	8-719-404-49	DIODE	MA111		
		< IC >			
IC901	8-759-196-14	IC	BA7149F-E2		
		< COIL >			
L901	1-412-031-11	INDUCTOR CHIP	47uH		
L902	1-412-957-11	INDUCTOR	33uH		
⚠L903	1-411-697-11	COIL, FERRITE (HLC)			
L904	1-414-757-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q902	8-729-106-68	TRANSISTOR	2SD1615A-GP		
Q903	8-729-216-31	TRANSISTOR	2SA1163-G		
Q904	8-729-230-63	TRANSISTOR	2SC4116-YG		
		< RESISTOR >			
R901	1-216-817-11	METAL CHIP	470	5%	1/16W
R902	1-216-817-11	METAL CHIP	470	5%	1/16W
R903	1-216-057-00	METAL CHIP	2 2K	5%	1/10W
R906	1-216-813-11	METAL CHIP	220	5%	1/16W
R907	1-216-845-11	METAL CHIP	100K	5%	1/16W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref No	Part No	Description			Remark
R908	1-216-852-11	METAL CHIP	390K	5%	1/16W
R909	1-216-833-11	METAL CHIP	10K	5%	1/16W
R910	1-216-835-11	METAL CHIP	15K	5%	1/16W
R912	1-216-857-11	METAL CHIP	1M	5%	1/16W
R916	1-218-881-11	METAL GLAZE	27K	0 50%	1/16W
R917	1-218-893-11	METAL GLAZE	82K	0 50%	1/16W
R918	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
R919	1-216-839-11	METAL CHIP	33K	5%	1/16W
R920	1-216-837-11	METAL CHIP	22K	5%	1/16W
R921	1-216-795-11	METAL GLAZE	6 8	5%	1/16W
R922	1-216-847-11	METAL CHIP	150K	5%	1/16W
R923	1-216-857-11	METAL CHIP	1M	5%	1/16W
R924	1-216-862-11	METAL GLAZE	2 7M	5%	1/16W
R925	1-216-862-11	METAL GLAZE	2 7M	5%	1/16W
R926	1-216-821-11	METAL CHIP	1K	5%	1/16W
R927	1-216-821-11	METAL CHIP	1K	5%	1/16W
R928	1-216-827-11	METAL CHIP	3 3K	5%	1/16W
R929	1-216-818-11	METAL CHIP	560	5%	1/16W
R930	1-216-791-11	METAL CHIP	3 3	5%	1/16W
R931	1-217-671-11	METAL CHIP	1	5%	1/10W
R932	1-216-829-11	METAL CHIP	4 7K	5%	1/16W
		< VARIABLE RESISTOR >			
RV904	1-238-862-11	RES, ADJ, CERMET	1M		
RV905	1-238-852-11	RES, ADJ, CERMET	470		
		< TRANSFORMER >			
⚠T901	1-453-124-11	TRANSFORMER ASSY, FLYBACK			
		< FLEXIBLE BOARD >			
⚠W901	1-540-019-21	SOCKET ASSY, CRT			

A-7073-094-A VF-111 BOARD, COMPLETE
****
(TRV72/TRV82/TRV94)

A-7073-119-A VF-111P BOARD, COMPLETE (TRV94E)
****
(Ref No 5,000 Series)

Ref No	Part No	Description			Remark
		< CAPACITOR >			
C851	1-162-967-11	CERAMIC CHIP	0 0033uF	10%	50V
C852	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C853	1-104-916-11	TANTAL CHIP	6 8uF	20%	20V
C854	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C855	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C856	1-135-259-11	TANTAL CHIP	10uF	20%	6.3V
C857	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C858	1-104-912-11	TANTAL CHIP	3 3uF	20%	6 3V
C859	1-164-227-11	CERAMIC CHIP	0 022uF	10%	25V
C860	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C865	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C867	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C868	1-165-128-11	CERAMIC CHIP	0 22uF		16V
C869	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C870	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C871	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C873	1-164-489-11	CERAMIC CHIP	0 22uF	10%	16V
C874	1-135-151-21	TANTALUM CHIP	4 7uF	20%	4V
C878	1-107-826-11	CERAMIC CHIP	0 1uF	10%	16V
C880	1-165-128-11	CERAMIC CHIP	0 22uF		16V (TRV94E)
C881	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
		< CONNECTOR >			
CN851	1-766-350-21	CONNECTOR, FFC/FPC 20P			
CN852	1-573-366-21	CONNECTOR, FFC/FPC 26P			
CN853	1-573-305-11	CONNECTOR, BOARD TO BOARD 10P			
		< DIODE >			
D852	8-719-043-70	DIODE	MA6S121-(TX)		
D853	8-719-802-36	DIODE	1SS250		
		< IC >			
IC851	8-759-097-75	IC	MB3789PFV-G-BND-ER		
IC852	8-759-337-40	IC	NJM2904V(TE2)		
IC853	8-759-337-40	IC	NJM2904V(TE2)		
IC854	8-759-338-95	IC	NJM2903V(TE2)		
		< COIL >			
L853	1-412-033-11	INDUCTOR CHIP	220uH		
L854	1-414-754-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q851	8-729-822-05	TRANSISTOR	2SD1622-ST-TD		
Q853	8-729-028-81	TRANSISTOR	DTA123JUA-T106		
Q870	8-729-425-64	TRANSISTOR	2SD2216Q		
Q871	8-729-425-64	TRANSISTOR	2SD2216Q		
		< RESISTOR >			
R832	1-216-797-11	METAL CHIP	10	5%	1/16W
R836	1-216-809-11	METAL CHIP	100	5%	1/16W
R840	1-216-853-11	METAL CHIP	470K	5%	1/16W
R841	1-216-845-11	METAL CHIP	100K	5%	1/16W
R842	1-216-845-11	METAL CHIP	100K	5%	1/16W
R843	1-216-849-11	METAL CHIP	220K	5%	1/16W
R844	1-216-150-91	METAL GLAZE	10	5%	1/8W
R846	1-216-849-11	METAL CHIP	220K	5%	1/16W
R849	1-216-837-11	METAL CHIP	22K	5%	1/16W
R850	1-216-833-11	METAL CHIP	10K	5%	1/16W
R852	1-216-841-11	METAL CHIP	47K	5%	1/16W
R853	1-218-899-11	METAL GLAZE	150K	0 50%	1/16W
R854	1-218-901-11	METAL GLAZE	180K	0 50%	1/16W
R855	1-216-841-11	METAL CHIP	47K	5%	1/16W
R856	1-218-899-11	METAL GLAZE	150K	0 50%	1/16W
R857	1-218-903-11	METAL GLAZE	220K	0 50%	1/16W
R858	1-216-842-11	METAL CHIP	56K	5%	1/16W
R859	1-216-848-11	METAL CHIP	180K	5%	1/16W
R860	1-216-841-11	METAL CHIP	47K	5%	1/16W
R861	1-216-843-11	METAL CHIP	68K	5%	1/16W
R862	1-216-838-11	METAL CHIP	27K	5%	1/16W
R863	1-216-847-11	METAL CHIP	150K	5%	1/16W
R864	1-216-841-11	METAL CHIP	47K	5%	1/16W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety
Replace only with part number specified

Ref. No	Part No.	Description			Remark
R865	1-216-842-11	METAL CHIP	56K	5%	1/16W
R867	1-216-850-11	METAL CHIP	270K	5%	1/16W
R868	1-216-864-11	METAL CHIP	0	5%	1/16W
R869	1-216-843-11	METAL CHIP	68K	5%	1/16W
R870	1-216-842-11	METAL CHIP	56K	5%	1/16W
R871	1-216-850-11	METAL CHIP	270K	5%	1/16W
R872	1-216-833-11	METAL CHIP	10K	5%	1/16W
R873	1-216-851-11	METAL CHIP	330K	5%	1/16W
R874	1-216-845-11	METAL CHIP	100K	5%	1/16W
R875	1-216-822-11	METAL CHIP	1 2K	5%	1/16W
R879	1-216-837-11	METAL CHIP	22K	5%	1/16W
R880	1-216-845-11	METAL CHIP	100K	5%	1/16W
R881	1-216-853-11	METAL CHIP	470K	5%	1/16W
R882	1-216-845-11	METAL CHIP	100K	5%	1/16W
R884	1-216-838-11	METAL CHIP	27K	5%	1/16W
R885	1-216-837-11	METAL CHIP	22K	5%	1/16W
R886	1-216-841-11	METAL CHIP	47K	5%	1/16W
R887	1-216-841-11	METAL CHIP	47K	5%	1/16W
R888	1-216-841-11	METAL CHIP	47K	5%	1/16W
R891	1-216-296-91	CONDUCTOR, CHIP (3216)			
R892	1-216-168-00	METAL GLAZE	56	5%	1/8W

A-7073-095-A VF-112 BOARD, COMPLETE
****
(TRV72/TRV82/TRV94)

A-7073-120-A VF-112P BOARD, COMPLETE (TRV94E)
****
(Ref. No 5,000 Series)

< CAPACITOR >

Ref. No	Part No.	Description			Remark
C901	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C902	1-164-156-11	CERAMIC CHIP	0 1uF		25V
C903	1-164-156-11	CERAMIC CHIP	0 1uF		25V
C905	1-135-179-21	TANTAL CHIP	2.2uF	20%	16V (TRV94E)
C905	1-162-638-11	CERAMIC CHIP	1uF		16V (TRV72/TRV82/TRV94)
C907	1-135-179-21	TANTAL CHIP	2 2uF	20%	16V (TRV94E)
C907	1-162-638-11	CERAMIC CHIP	1uF		16V (TRV72/TRV82/TRV94)
C908	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C909	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C910	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C911	1-135-181-21	TANTALUM CHIP	4 7uF	20%	6 3V
C912	1-164-156-11	CERAMIC CHIP	0 1uF		25V
C913	1-135-179-21	TANTAL CHIP	2 2uF	20%	16V (TRV94E)
C913	1-162-638-11	CERAMIC CHIP	1uF		16V (TRV72/TRV82/TRV94)
C914	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C916	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C917	1-135-259-11	TANTAL CHIP	10uF	20%	6 3V
C918	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C919	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
C920	1-162-967-11	CERAMIC CHIP	0 0033uF	10%	50V
C921	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C922	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C924	1-164-505-11	CERAMIC CHIP	2 2uF		16V
C925	1-165-112-11	CERAMIC CHIP	0 33uF		16V
C927	1-107-688-11	TANTAL CHIP	1 5uF	20%	20V
C929	1-164-156-11	CERAMIC CHIP	0 1uF		25V
C930	1-135-179-21	TANTAL CHIP	2 2uF	20%	16V
C931	1-216-864-11	METAL CHIP	0	5%	1/16W
C936	1-162-970-11	CERAMIC CHIP	0 01uF	10%	25V
C937	1-109-994-11	CERAMIC CHIP	2 2uF	10%	10V (TRV94E)
C938	1-109-994-11	CERAMIC CHIP	2 2uF	10%	10V (TRV94E)
C939	1-109-994-11	CERAMIC CHIP	2 2uF	10%	10V (TRV94E)
C940	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V

< CONNECTOR >

CN901	1-573-935-11	CONNECTOR, FFC/FPC (ZIF) 26P
CN902	1-573-925-11	CONNECTOR, FFC/FPC (ZIF) 16P

< DIODE >

D901	8-713-102-80	DIODE 1T369-01-T8A
D902	8-719-060-95	DIODE CL-200IR-X-TSL-BC

< IC >

IC901	8-759-427-85	IC MB88146APFV-G-BND-ER
IC902	8-752-080-54	IC CXA1515AQ-T4
IC904	8-752-377-97	IC CXD2411AR-T4

< COIL >

L901	1-414-754-11	INDUCTOR	10uH
L902	1-414-754-11	INDUCTOR	10uH
L903	1-414-756-11	INDUCTOR	47uH
L905	1-412-949-21	INDUCTOR	6 8uH

< TRANSISTOR >

Q901	8-729-425-50	TRANSISTOR 2SB1462Q
Q902	8-729-425-64	TRANSISTOR 2SD2216Q
Q906	8-729-040-26	TRANSISTOR CPT-182S-C-TSL-CD

< RESISTOR >

R901	1-216-852-11	METAL CHIP	390K	5%	1/16W
R902	1-216-825-11	METAL CHIP	2 2K	5%	1/16W
R904	1-216-852-11	METAL CHIP	390K	5%	1/16W
R905	1-216-852-11	METAL CHIP	390K	5%	1/16W
R906	1-216-837-11	METAL CHIP	22K	5%	1/16W
R907	1-216-839-11	METAL CHIP	33K	5%	1/16W
R908	1-216-837-11	METAL CHIP	22K	5%	1/16W
R909	1-216-838-11	METAL CHIP	27K	5%	1/16W
R911	1-216-839-11	METAL CHIP	33K	5%	1/16W
R912	1-216-839-11	METAL CHIP	33K	5%	1/16W
R913	1-216-839-11	METAL CHIP	33K	5%	1/16W
R914	1-216-839-11	METAL CHIP	33K	5%	1/16W
R915	1-216-833-11	METAL CHIP	10K	5%	1/16W
R917	1-216-821-11	METAL CHIP	1K	5%	1/16W
R921	1-218-905-11	METAL GLAZE	270K	0 50%	1/16W

Ref No	Part No.	Description			Remark
R922	1-218-875-11	METAL GLAZE	15K	0.50%	1/16W
R923	1-216-849-11	METAL CHIP	220K	5%	1/16W
R924	1-216-837-11	METAL CHIP	22K	5%	1/16W
R934	1-216-839-11	METAL CHIP	33K	5%	1/16W
R935	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R936	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R937	1-216-840-11	METAL CHIP	39K	5%	1/16W
R938	1-216-845-11	METAL CHIP	100K	5%	1/16W
R939	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R940	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R941	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R942	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R943	1-216-839-11	METAL CHIP	33K	5%	1/16W

MISCELLANEOUS

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Ref No	Part No	Description	Remark
12	1-475-098-11	SWITCH BLOCK, CONTROL(SS-8100) (TRV54E/TRV94/TRV94E)	
12	1-475-098-21	SWITCH BLOCK, CONTROL(SS-8100) (EXCEPT TRV54E/TRV94/TRV94E)	
15	1-475-099-31	SWITCH BLOCK, VTR CONTROL (FK) (TRV62/TRV72/TRV82)	
15	1-475-099-41	SWITCH BLOCK, VTR CONTROL (FK) (TRV54E/TRV56E/TRV94/TRV94E E,HK,JE)	
15	1-475-099-51	SWITCH BLOCK, VTR CONTROL (FK) (TRV94E AEP,UK)	
23	1-500-227-11	BEAD, FERRITE (TRV94E AEP,UK)	
104	1-957-148-11	HARNESS (PD-105)(EXCEPT TRV64E)	
154	1-957-148-11	HARNESS (PD-105)(EXCEPT TRV64E)	
253	1-475-100-11	SWITCH BLOCK, CONTROL (SD-4) (EXCEPT TRV64E)	
254	1-665-144-11	FP-503 FLEXIBLE BOARD (EXCEPT TRV64E)	
255	1-665-143-11	FP-502 FLEXIBLE BOARD (EXCEPT TRV64E)	
266	1-475-068-21	SWITCH BLOCK, CONTROL(MF-7800) (EXCEPT TRV64E)	
268	1-473-602-21	SWITCH BLOCK, CONTROL(PS-6500) (EXCEPT TRV64E)	
273	1-957-148-11	HARNESS (PD-105)(EXCEPT TRV64E)	
312	1-660-285-11	FP-386 FLEXIBLE BOARD	
314	1-665-149-11	FP-530 FLEXIBLE BOARD (TRV72/TRV82/TRV94/TRV94E)	
356	1-660-303-11	FP-395 FLEXIBLE BOARD (TRV54E/TRV56E/TRV62)	
401	1-500-227-11	BEAD, FERRITE (TRV94/TRV94E)	
407	1-660-277-11	FP-377 FLEXIBLE BOARD (EXCEPT TRV64E)	
408	1-665-148-11	FP-527 FLEXIBLE BOARD (EXCEPT TRV64E)	
409	1-665-146-11	FP-516 FLEXIBLE BOARD (EXCEPT TRV64E)	
411	1-774-867-21	CONNECTOR, EXTERNAL (HOT SHOE) 8P (EXCEPT TRV64E)	
412	1-665-145-11	FP-512 FLEXIBLE BOARD (EXCEPT TRV64E)	
414	1-660-280-11	FP-380 FLEXIBLE BOARD (EXCEPT TRV64E)	
417	1-665-142-11	FP-500 FLEXIBLE BOARD (EXCEPT TRV64E)	
419	1-500-226-31	BEAD, FERRITE (TRV62/TRV72/TRV82/TRV94E AEP,UK)	
456	1-694-076-21	TERMINAL BOARD, BATTERY (EXCEPT TRV64E)	
460	8-848-710-01	LENS, ZOOM (VCL-4214VA)	
462	1-547-787-41	FILTER BLOCK, OPTICAL (EXCEPT TRV64E)	
465	1-665-147-11	FP-523 FLEXIBLE BOARD (EXCEPT TRV64E)	
760	1-658-213-11	FP-355 FLEXIBLE BOARD	
762	1-657-786-11	FP-221 FLEXIBLE BOARD	
764	1-658-214-11	FP-356 FLEXIBLE BOARD	
803	1-657-785-11	FP-248 FLEXIBLE BOARD	
817	1-657-784-11	FP-220 FLEXIBLE BOARD	
501	8-848-710-01	LENS, ZOOM (VCL-4214VA)	
1011	1-475-098-21	SWITCH BLOCK, CONTROL(SS-8100)	
1014	1-475-099-81	SWITCH BLOCK, VTR CONTROL(FK)(TRV64E CH)	
1014	1-475-099-91	SWITCH BLOCK, VTR CONTROL(FK) (TRV64E AEP,EE,NE,RU,UK)	
1101	1-665-144-11	FP-503 FLEXIBLE BOARD	
1102	1-665-143-11	FP-502 FLEXIBLE BOARD	
1115	1-475-068-31	SWITCH BLOCK, CONTROL(MF-7800)	
1117	1-473-602-31	SWITCH BLOCK, CONTROL(PS-6500)	
1124	1-475-158-11	SWITCH BLOCK, CONTROL (TRV64E)	
1155	1-957-149-11	HARNESS, PD-106	
1156	1-665-669-11	FP-529 FLEXIBLE BOARD (TRV64E)	
1205	1-665-668-11	FP-509 FLEXIBLE BOARD (TRV64E)	
1251	1-500-227-11	BEAD, FERRITE (TRV64E AEP,EE,NE,RU,UK)	
1258	1-665-148-11	FP-527 FLEXIBLE BOARD	
1259	1-660-277-11	FP-377 FLEXIBLE BOARD	
1261	1-665-146-11	FP-516 FLEXIBLE BOARD	
1264	1-665-142-11	FP-500 FLEXIBLE BOARD	
1266	1-665-674-11	FP-515 FLEXIBLE BOARD (TRV64E)	
1267	1-660-300-11	FP-426 FLEXIBLE BOARD (TRV64E)	
1268	1-500-226-31	BEAD, FERRITE (TRV64E AEP,EE,NE,RU,UK)	
1305	1-694-076-21	TERMINAL BOARD, BATTERY	
1309	8-848-710-01	LENS, ZOOM (VCL-4214VA)	
1311	1-547-787-41	FILTER BLOCK, OPTICAL	
1314	1-665-681-11	FP-524 FLEXIBLE BOARD (TRV64E)	
⚠BL002	1-517-524-91	TUBE, FLUORESCENT, COLD CATHODE (BACK LIGHT) (TRV64E)	
⚠BL002	1-517-655-11	TUBE, FLUORESCENT COLD CATHODE (BACK LIGHT)(TRV54E/TRV62/TRV72)	
⚠BL002	1-517-656-21	TUBE, FLUORESCENT COLD CATHODE (BACK LIGHT)(TRV56E/TRV82/TRV94/TRV94E)	
D001	8-719-988-42	DIODE GL453	
IC401	A-7030-615-A	CCD BLOCK ASSY (079 SERVICE) (CCD IMAGER)(TRV62/TRV72/TRV82/TRV94)	
IC401	A-7030-782-A	CCD BLOCK ASSY (211 SERVICE) (CCD IMAGER)(TRV54E/TRV56E/TRV64E/TRV94E)	
J001	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)	
J903	1-695-514-21	JACK (SMALL TYPE) 1P (HEADPHONES)	
LCD901	1-801-664-11	INDICATOR MODULE, LIQUID CRYSTAL (TRV56E/TRV94/TRV94E)	
LCD901	1-801-665-21	INDICATOR MODULE, LIQUID CRYSTAL (TRV82)	
LCD901	1-801-667-11	INDICATOR MODULE, LIQUID CRYSTAL (TRV54E/TRV62/TRV72)	
LCD901	1-801-697-21	DISPLAY PANEL, LIQUID CRYSTAL (TRV64E)	
LCD902	8-753-016-10	LCX005BK-1/5 (TRV72/TRV82/TRV94/TRV94E)	
LCD903	1-801-697-11	DISPLAY PANEL, LIQUID CRYSTAL (EXCEPT TRV64E)	
LCD903	1-801-662-21	INDICATOR MODULE, LIQUID CRYST(TRV64E)	
M901	A-7048-849-A	DRUM ASSY (DGH-0D4A-R) (TRV62/TRV72/TRV82/TRV94)	
M901	A-7048-851-A	DRUM ASSY (DGH-0D5A-R) (TRV54E/TRV56E/TRV64E/TRV94E)	
M902	8-835-531-01	MOTOR, DC SCE-0601A (CAPSTAN)	
M903	X-3945-401-1	MOTOR ASSY, DC (LOADING)	

Be sure to read "Note on the CCD Imager replacement" on page 4–10 when changing the CCD imager.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié

Ref. No.	Part No	Description	Remark
M905	1-698-760-01	MOTOR, FOCUS STEPPING	
M906	1-698-759-01	MOTOR, ZOOM STEPPING	
⚠ND801	1-517-414-21	FLUORESCENT TUBE (0 55 INCH)	
MIC901	1-542-312-11	MICROPHONE (L-CH)	
MIC901	1-542-313-11	MICROPHONE UNIT (L/R-CH)	
MIC902	1-542-312-11	MICROPHONE (R-CH)	
S001	1-692-614-11	SWITCH, PUSH (3 KEY)	(Hi8 MP, ME/MP, REC PROOF)
S002	1-572-688-11	SWITCH, PUSH (1 KEY)(C C LOCK)	
S004	1-572-688-11	SWITCH, PUSH (1 KEY)(EJECT)	
S901	1-762-436-15	SWITCH, ROTARY (ENCODER)	
SE451	1-810-889-71	SENSOR, ANGULAR VELOCITY (YAW)	
SE452	1-810-889-81	SENSOR, ANGULAR VELOCITY (PITCH)	
SP901	1-504-753-21	SPEAKER (2 8CM)	
⚠V901	1-452-673-31	CRT ASSY (M01KXX90WB)	(TRV54E/TRV56E/TRV62/TRV64E)

ACCESSORIES & PACKING MATERIALS
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Ref. No.	Part No	Description	Remark
⚠	1-569-008-11	ADAPTOR, CONVERSION 2P	(TRV54E/TRV56E E,HK,JE/TRV64E CN/TRV94/TRV94E E,HK)
	1-573-291-11	CONNECTOR, CONVERSION	(TRV64E.AEP,EE,NE,RU,UK/TRV94E AEP,UK)
	1-575-334-11	CORD, CONNECTION (TRV94E JE)	(A/V CONNECTING CABLE (STEREO)1 5m)
	1-770-783-11	CONNECTOR, CONVERSION	(TRV64E AEP,EE,NE,RU,UK/TRV94E AEP,UK)
	3-859-428-11	MANUAL, INSTRUCTION (ENGLISH)	(TRV62/TRV72/TRV82)
	3-859-428-21	MANUAL, INSTRUCTION (FRENCH)	(TRV72:CND/TRV82·CND)
	3-859-428-31	MANUAL, INSTRUCTION (ENGLISH, SPANISH)	(TRV94/TRV94E:HK)
	3-859-428-41	MANUAL, INSTRUCTION (CHINESE)	(TRV94·E,HK/TRV94E HK)
	3-859-428-51	MANUAL, INSTRUCTION (KOREAN)(TRV94 JE)	
	3-859-444-11	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN)	(TRV94E AEP,UK)
	3-859-444-21	MANUAL, INSTRUCTION (GERMAN,ITALIAN)	(TRV94E AEP)
	3-859-444-31	MANUAL, INSTRUCTION	(SPANISH,PORTUGUESE)(TRV94E AEP)
	3-859-444-41	MANUAL, INSTRUCTION (FRENCH,DUCH)	(TRV94E.AEP)
	3-859-616-11	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN)	(TRV64E·EE,NE,RU,UK)
	3-859-616-21	MANUAL, INSTRUCTION (GERMAN,ITALIAN)	(TRV64E AEP)
	3-859-616-31	MANUAL, INSTRUCTION	(SPANISH,PORTUGUESE)(TRV64E AEP1)
	3-859-616-41	MANUAL, INSTRUCTION (FRENCH,DUCH)	(TRV64E AEP2)
	3-859-616-51	MANUAL, INSTRUCTION (SWEDISH,POLISH)	(TRV64E EE,NE,RU)
	3-859-616-61	MANUAL, INSTRUCTION (CHINESE)(TRV64E CN)	
	3-859-617-11	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN)	(TRV54E/TRV56E/TRV94E·E)
	3-859-617-21	MANUAL, INSTRUCTION (FRENCH,GERMAN)	(TRV54E/TRV56E E,HK,JE/TRV94E E)
	3-859-617-31	MANUAL, INSTRUCTION (ARABIC,PERSIAN)	(TRV54E/TRV56E E/TRV94E E)
	3-859-617-41	MANUAL, INSTRUCTION (CHINESE)(TRV56E HK)	
	3-859-617-51	MANUAL, INSTRUCTION (CHINESE)	(TRV54E/TRV56E E,JE/TRV94E E)
	3-947-969-21	BELT (S), SHOULDER (EXCEPT TRV94E JE)	
	3-967-258-01	INDIVIDUAL CARTON (TRV82)	
	3-970-781-01	CASE (L), BATTERY	(TRV62/TRV64E AEP,EE,NE,RU,UK/TRV72/TRV82/TRV94E AEP,UK)
	3-971-463-01	LABEL, FIRE CAUTION DISCERN	(TRV62/TRV72 US/TRV82 US)
*	3-973-100-11	INDIVIDUAL CARTON (TRV72)	
*	3-973-100-21	INDIVIDUAL CARTON (TRV62)	
*	3-975-902-01	CUSHION, ACC (EXCEPT TRV64E/TRV94E JE)	
*	3-975-903-01	CUSHION (LOWER)(EXCEPT TRV64E/TRV94E JE)	
*	3-975-904-01	INDIVIDUAL CARTON (TRV94E AEP,UK)	
*	3-975-904-11	INDIVIDUAL CARTON (TRV94E E,HK,JE)	
*	3-975-904-21	INDIVIDUAL CARTON (TRV94)	
*	3-975-904-31	INDIVIDUAL CARTON (TRV54E)	
*	3-975-904-41	INDIVIDUAL CARTON (TRV56E)	
*	3-975-981-01	CUSHION (LOWER)(TRV64E)	
*	3-975-982-01	CUSHION, ACC (TRV64E)	
	8-917-593-90	REMOCON, SONY RMT-717 SETE	(TRV94/TRV94E AEP,UK,E,HK)
⚠	A-7009-233-A	AC POWER ADAPTOR (AC-V316)	(TRV62/TRV72/TRV82)
⚠	A-7009-237-A	AC POWER ADAPTOR (AC-V316)(TRV56E AUS)	
⚠	A-7009-238-A	AC POWER ADAPTOR (AC-V316)	(TRV56E HK/TRV64E.HK/TRV94E HK)
⚠	A-7009-234-A	AC POWER ADAPTOR (AC-V326)	(TRV54/TRV56E E,JE/TRV64E CH/TRV94 E,JE/TRV94E E,JE)
⚠	A-7009-749-A	AC POWER ADAPTOR (AC-V326)	(TRV64E AEP,EE,NE,RU/TRV94E AEP)
⚠	A-7009-750-A	AC POWER ADAPTOR (AC-V326)	(TRV64E UK/TRV94E UK)
	A-7092-699-A	CASE (L) ASSY, BATTERY	(TRV64E AEP,EE,NE,RU,UK/TRV72 CND/TRV82 CND/TRV94E AEP,UK)
	A-7092-936-A	CASE (L) ASSY (U), BATTERY	(TRV62/TRV72.US/TRV82.US)
**	NP-F530	BATTERY PACK	

Note.
** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY

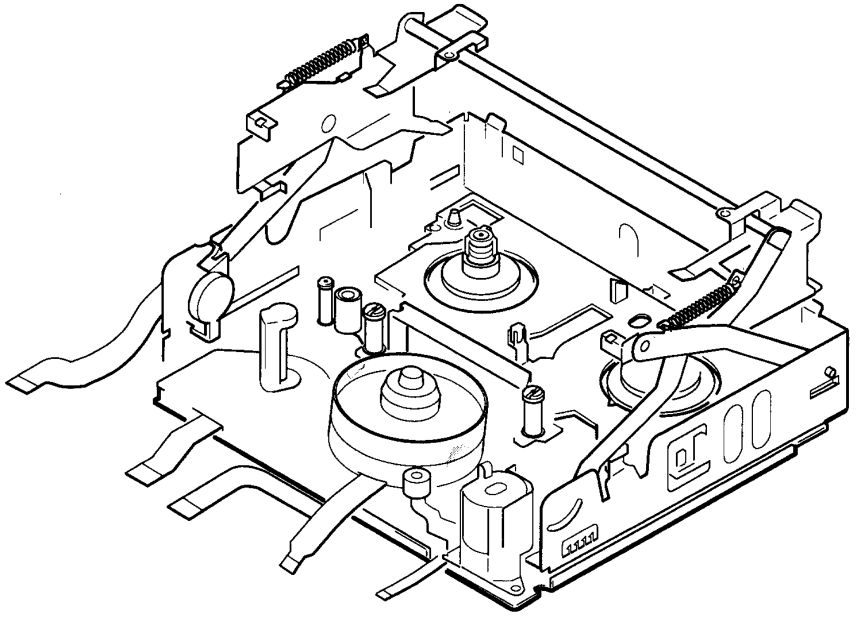
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité Ne les remplacer que par une pièce portant le numéro spécifié

8mm Video MECHANICAL ADJUSTMENT MANUAL Ⅶ

B MECHANISM

Video8

Use this mechanical adjustment manual Ⅶ together with the service manual of the respective models.



8 MECHANISM DECK

SONY®

MICROFILM

TABLE OF CONTENTS

1. PREPARATION FOR CHECKING, ADJUSTING AND REPLACING THE MECHANISM

1-1. Cassette Compartment Block Assy ·················3
1-2. How to Operate the Mechanism with the Cassette Compartment Block Assy Removed ··············4

2. PERIODIC CHECK AND MAINTENANCE ITEMS

2-1. Rotary Drum Assy Cleaning ····················5
2-2. Tape Path Cleaning ····························5
2-3. Periodic Check Items ··························6
2-4. Service Tool List ·····························7

3. CHECKING, ADJUSTING AND REPLACING THE MECHANISM

3-1. HC Roller Block Assy ··························8
3-2. Drum Assy ·····································9
3-3. Drum Base Block Assy, Shaft Ground ············10
3-4. Gooseneck Retainer, Gooseneck Gear Assy ········11
3-5. LS Chassis Block Assy, Mechanical Chassis Block Assy ··················12
3-6. T Reel Table Assy, T Ratchet, T Soft Gear Block Assy ························15
3-7. Tension Regulator Band Assy, TG1 Arm Assy, S Reel Table Assy, S Ratchet, S Ratchet Release Plate, RVS Arm ················16
3-8. Pinch Arm Assy, TG4 Arm Block Assy ············17
3-9. LS Cam Plate, LS Guide Cover, Lid Opener, EJ Arm, Lock Guide ························18
3-10. Guide Base (S) and (T) Block Assemblies, Guide Rail ·································19
3-11. DC Motor Assy (Loading) ·····················21
3-12. Tension Regulator Plate 2, Relay Gear, M Slider Assy ·······························22
3-13. LS Arm, HC Drive Arm, Pinch Press Plate, Tension Regulator Plate ·······················23
3-14. Cam Gear ·····································24
3-15. GL Slider Assy, GL Arm ·······················25
3-16. Rotary Switch ································26
3-17. Capstan Motor ································27
3-18. Tension Regulator Position Adjustment ·········28
3-19. FWD Tape Hold -Back Tension Adjustment ········29

4. TAPE PATH ADJUSTMENT

4-1. Preparations for Adjustment ···················30
4-2. Tracking Adjustment ···························31
4-3. No. 4 Guide (TG-4) Adjustment ·················31
4-4. CUE, REV Waveforms Check ······················32
4-5. Checks After Adjustments ······················32

5. EXPLODED VIEWS

5-1. Cassette Compartment Block Section ·············34
5-2. LS Chassis Block Section ······················35
5-3. Mechanism Chassis Block Section ················36

6. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM ··················37

7. ELECTRICAL PARTS LIST ················38

For the mode selector operation, schematic diagram and parts list, refer to the Supplement-1 Manual.

1. PREPARATION FOR CHECKING, ADJUSTING AND REPLACING THE MECHANISM

For the disassembly procedures of the cabinet and printed wiring boards, please refer to the “DISASSEMBLY” section of the service manual of the respective models.
To re-assemble the mechanical parts which are disassembled in the following sections, perform the disassembly steps in reverse, unless otherwise specified.
The mechanisms are adjusted while set in the USE mode of operation. (Refer to the “Mode Selector Operation Procedure of the Supplement-1 Manual for how to enter the USE mode.)

1-1. Cassette Compartment Block Assy

1. Disassembly Procedure (Refer to Fig. 1.)

1) Set the mechanism to USE mode.
2) Confirm that the Cassette Compartment Block Assy is opened. If it is not opened, open it referring to Fig. a.
3) Remove the claws Ⓐ and Ⓑ of the Damper Assy ① from the chassis.
4) Remove the washer ② from the shaft of the Cassette Compartment near the Drum, next to the loading motor. Remove the shaft of the arm from the slot.
5) Remove the shaft of the arm from the slot Ⓒ of the Cassette Compartment near the Drum, next to the capstan motor. (Refer to Fig. b)
6) Lift up the Cassette Compartment at the Drum side in the direction of the arrow Ⓓ, and remove the arm shaft of the Cassette Compartment from the LS Chassis ④ near the Reel Tables. Remove the Cassette Compartment Assy ③ in the direction of the arrow Ⓔ.

2. Precautions During Re-Assembling

1) After attaching the Tension Spring, confirm that the straight portion at the end of the curved hook of the spring is positioned inside the mechanism. (Refer to Fig. c)
2) Confirm that the claw in the bottom of the shaft near the Reel Table of the Cassette Compartment is hooked to the LS Chassis.
3) Confirm that the claw of the Damper Assy is hooked to the LS Chassis. (Refer to Fig. b)

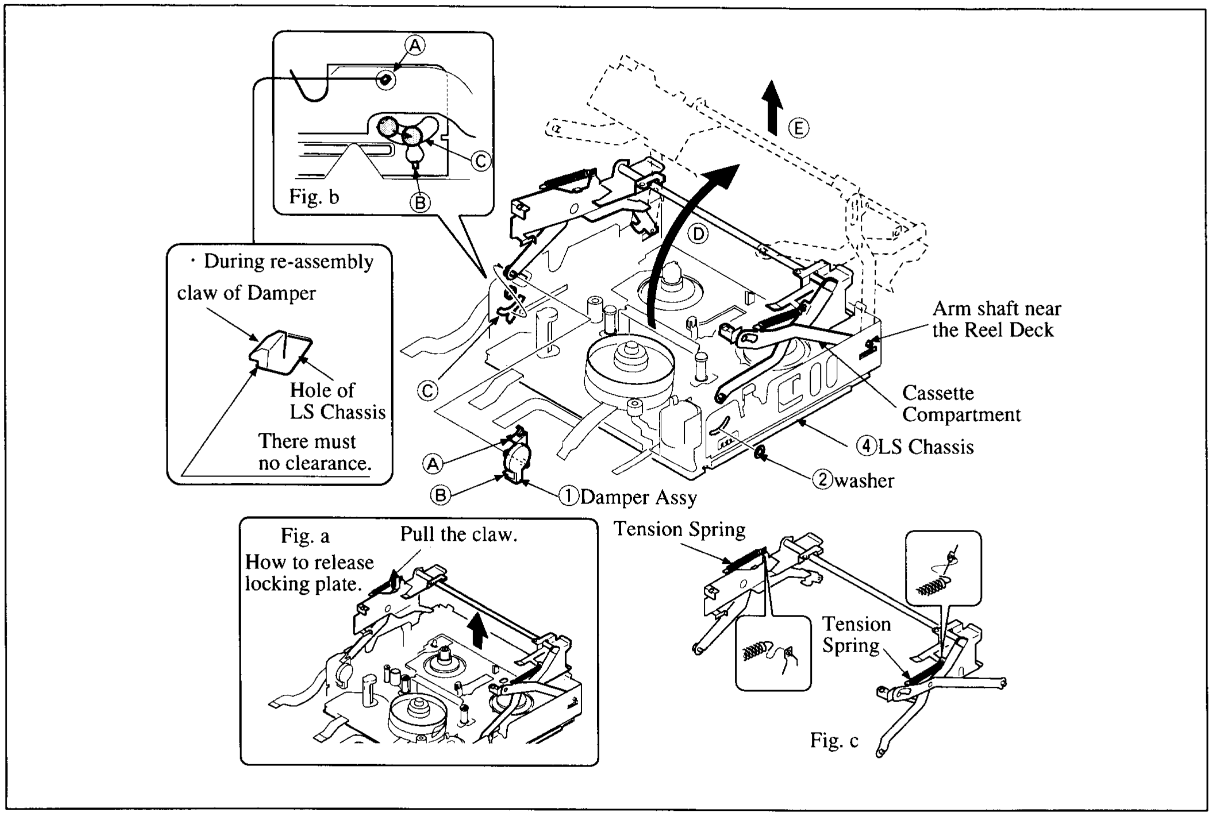

Ⓐ
Ⓒ
Fig. b
Ⓑ
Ⓔ
Ⓓ
· During re-assembly claw of Damper
Hole of LS Chassis
There must no clearance.
Arm shaft near the Reel Deck
Ⓒ
Cassette Compartment
④LS Chassis
Ⓐ
Ⓑ
①Damper Assy
②washer
Fig. a
Pull the claw.
How to release locking plate.
Tension Spring
Tension Spring
Fig. c

Fig. 1

1-2. How to Operate the Mechanism with the Cassette Compartment Block Assy Removed

1. How to load a cassette tape (Refer to Fig. 2):

1) While referring to section "DISASSEMBLY" of the respective service manual, turn the main power on with the cabinet and camera section removed. (It enables to operate the mechanical deck.)
2) Connect the adjustment remote commander (Ref. No. J-10) and establish the TEST mode.

> Example of establishing the TEST mode: model CCD-TR420E/TR440E.
> Select page: 6, address: 00, set data :01 and press the PAUSE button to release protection.
> Select page: 7, address: 01, set data: 01 and press the PAUSE button.
> After tape loading or other desired operations of mechanism are completed, be sure to perform the following:
> Select page: F, address: 01, set data :00 and press the PAUSE button.
> Select page: 6, address: 00, set data: 00 and press the PAUSE button.

3) Press the push-switch ① knob in the direction of the arrow which sets the machine into loading mode.

☆ PB, FF/REW and CUE/REV operations are possible.

2. How to establish RECORD mode:

1) Press pin of the push-switch ② (ON state) and keep the ON state by fixing with adhesive tape ③.
2) Turn the main power switch ON (select VTR or CAMERA position of in case of camera).
3) Set the RECORD switch to ON.
(When the TEST mode is selected, the rotation detection of the S and T reel tables is muted, and the top end sensor is disable which allow to run the tape.)

3. How to eject a cassette tape:

1) Press the EJECT switch to ON.

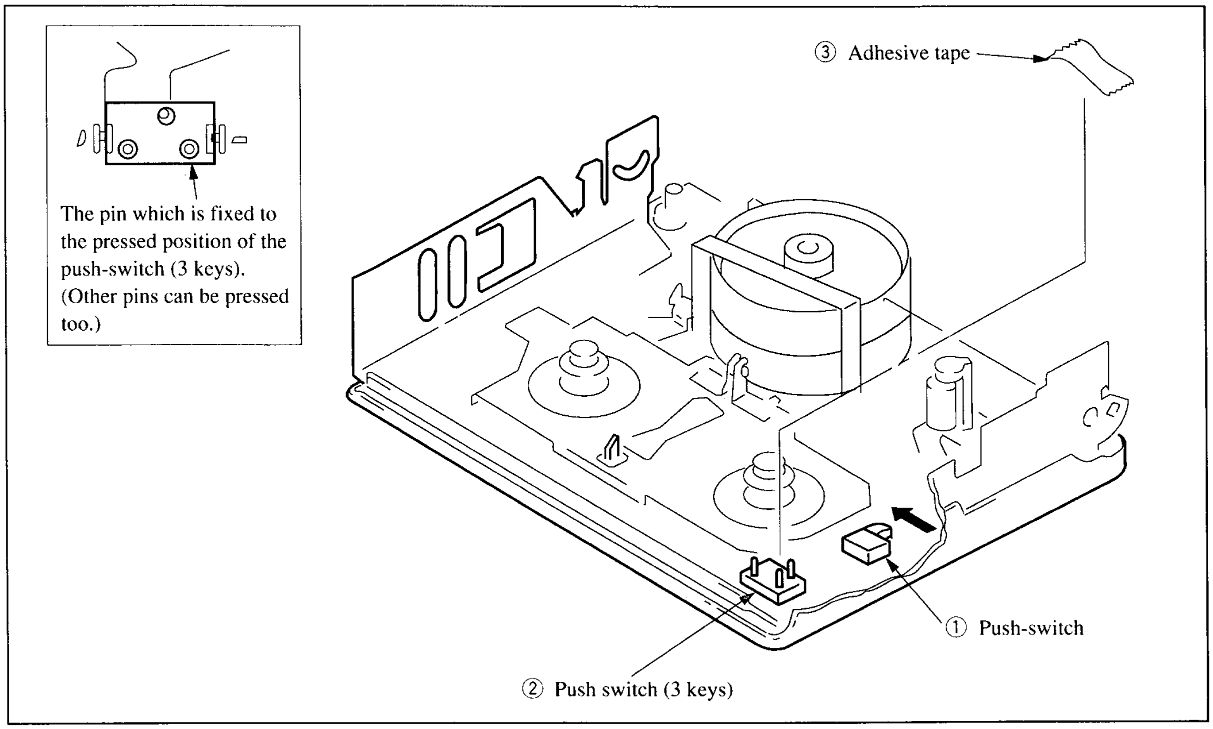

The pin which is fixed to the pressed position of the push-switch (3 keys). (Other pins can be pressed too.)

Fig. 2

2. PERIODIC CHECK AND MAINTENANCE ITEMS

- Perform the following periodic check and maintenance to ensure that the machine functions continue to operate in peak condition, and to protect the tape and mechanism deck. After completing repair work, perform the following maintenance items regardless of how long the user's machine has been used.

2-1. Rotary Drum Assy Cleaning

Press the cleaning piece (Ref. No. J-2) moistened with cleaning fluid (Ref. No. J-1) lightly on the Rotary Drum Assy. Gently turn the Rotary Drum Assy slowly by hand counter-clockwise to clean the rotary drum.

Caution: Never attempt to turn the head drum motor by turning the main power ON. Also, never turn the drum clockwise by hand. In addition, never move the cleaning piece vertically with respect to the head tips, since this will damage them. Never clean the head drum in any way other than as described above.

2-2. Tape Path Cleaning (Refer to Fig. 3.)

1) Set the mechanism to USE mode. Clean the tape path system (TG-1, TG-2, TG-3, TG-4, pinch roller, capstan shaft) and lower drum using a very thin cotton swab (Ref. No. J-3) moistened with cleaning fluid.

Caution: Take care that the very thin cotton swab (Ref. No. J-3) does not touch the oil or grease of the various link mechanisms.

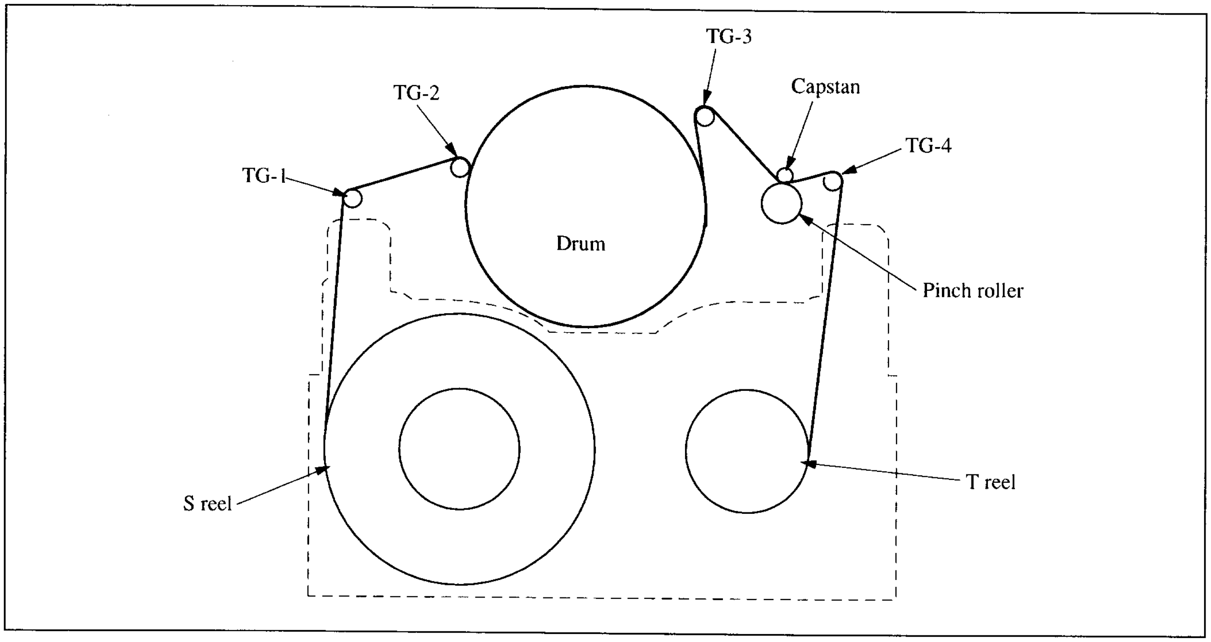


Fig. 3

2-3. Periodic Check Items

	Maintenance and Inspection Points	Operating Hours										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Cleaning of tape running surface	○	○	○	○	○	○	○	○	○	○	Take care not to get oily.
	Cleaning and degaussing of Rotary Drum Assy	○	○	○	○	○	○	○	○	○	○	Take care not to get oily.
Drive System	Timing Belt	—	☆	—	☆	—	☆	—	☆	—	☆	3-965-546-01
	Capstan Shaft	—	◎	—	◎	—	◎	—	◎	—	◎	Take great care not to let any oil contact the tape running surface.
	Change Gear Shaft Relay Pulley Shaft	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading Motor	—	☆	—	☆	—	☆	—	☆	—	☆	X-3945-401-1
Performance Check	Abnormal Sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Tape Hold-back Tension Measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake System	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD RVS } Torque Measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○Cleaning ◎Lubrication ☆Check

Note: When overhauling the machine, replace the parts while referring to the above table.

Note: Regarding oil

- Be sure to use the specified oil. (If the viscosity and other characteristics are different, various troubles may arise.)
  Oil: Sony part No. 7-661-018-18
  (Mitsubishi diamond oil hydro fluid NT-68)
- For the oil lubricated bearings, use oil free from dust or foreign materials. If the oil contains any dust or foreign material, the bearings will wear out quickly or burn out.
- One drop of oil is the amount of oil which forms at the tip of a stick of 2 mm diameter.

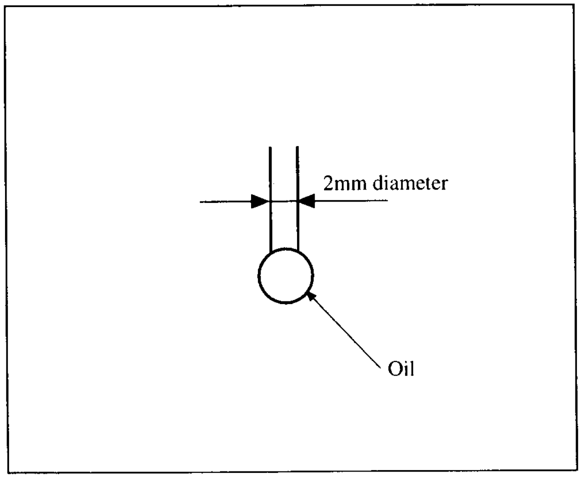


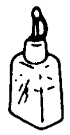
Fig. 4

2-4. Service Tool List

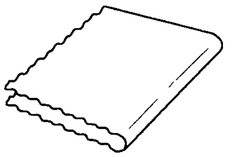
Ref. No.	Name	Parts Code	Tool Stamp	Applications
J-1	Cleaning fluid	Y-2031-001-0	——	
J-2	Cleaning piece	2-034-697-00	——	
J-3	Very thin cotton swab (made by Nippon Cotton Swab Inc. (P752D))		——	
J-4	Head demagnetizer	Commercially available	——	
J-5	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-6	Alignment tape (NTSC : WR5-1NP) (PAL : WR5-1CP)	8-967-995-02 8-967-995-07	——	Tape path
J-7	FWD/RVS take-up torque cassette	J-6080-824A	GD-2086	
J-8	Screwdriver for tape path adjustment	J-6082-026-A	——	For tape guide adjustment
J-9	FWD/BACK tension adjustment screwdriver	J-6082-187-A	——	
J-10	Remote commander for adjustment	J-6082-053-B	——	Tape path (Setting PATH mode)
J-11	MD process table	J-6082-166-A	——	
J-12	FLOIL Grease SG-941	7-662-001-39	——	
J-13	FLOIL Grease SG-055G	7-651-000-09	——	

Other equipment
- Oscilloscope
- Analog circuit tester (input impedance 20 kΩ)

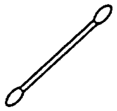
J-1



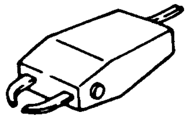
J-2



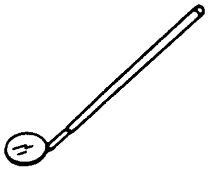
J-3



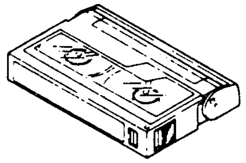
J-4



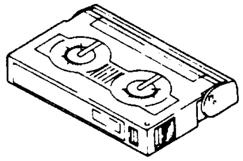
J-5



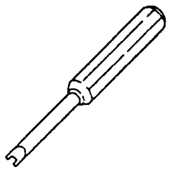
J-6



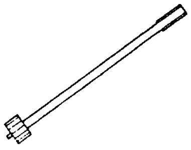
J-7



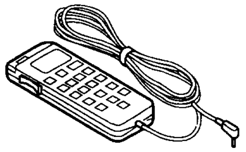
J-8



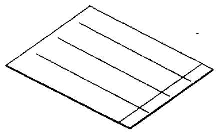
J-9



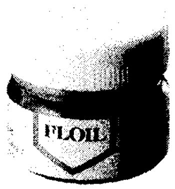
J-10



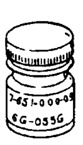
J-11



J-12



J-13



3. CHECKING, ADJUSTING AND REPLACING THE MECHANISM

3-1. HC Roller Block Assy (Refer to Fig. 5)

1. Disassembly Procedure

1) Remove the Torsion Spring ① from the cut-out Ⓐ of the motor holder. Hook it to the claw Ⓑ of the HC Arm.
2) Remove the HC Roller Block Assy in the direction shown by Ⓒ.
3) Remove the stop washer ② and remove the HC Roller Block Assy ③.

2. Precautions During Re-Assembly

1) After attaching the HC Roller Block Assy, confirm that both ends of the torsion spring are hooked to Ⓐ and Ⓓ.
2) Align the block so that the cut-out Ⓔ agrees with the rib Ⓕ.

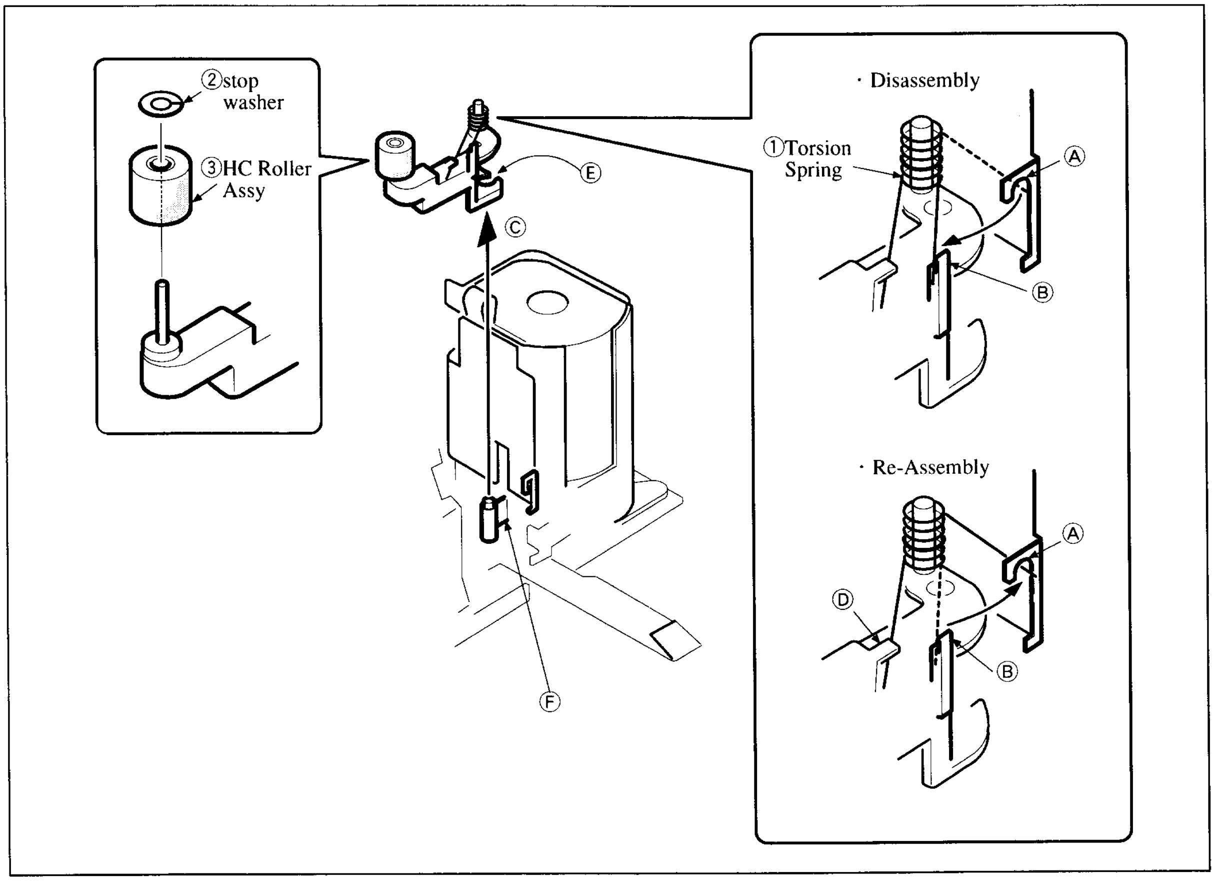

②stop washer
③HC Roller Assy
Ⓔ
Ⓒ
Ⓕ
· Disassembly
①Torsion Spring
Ⓐ
Ⓑ
· Re-Assembly
Ⓓ
Ⓐ
Ⓑ

Fig. 5

3-2. Drum Assy (Refer to Fig. 6)

1. Disassembly Procedure

1) Set the mechanism to $\boxed{\text{USE}}$ mode.
2) Remove the three screws (M 1.4) ① and remove the Drum Assy ②.

Caution: Be careful not to touch the outer circumference of the drum. (Hold the portions Ⓐ and Ⓑ of the drum assy.)

2. Precautions During Re-Assembly

1) Be careful not to touch the outer circumference of the drum. (Hold the portions Ⓐ and Ⓑ of the drum assy.)
2) When tightening the three screws (M 1.4), tighten them in the order Ⓒ, then Ⓓ, then Ⓔ.
3) After attaching the Drum Assy, perform the steps in section "4. TAPE PATH ADJUSTMENT".

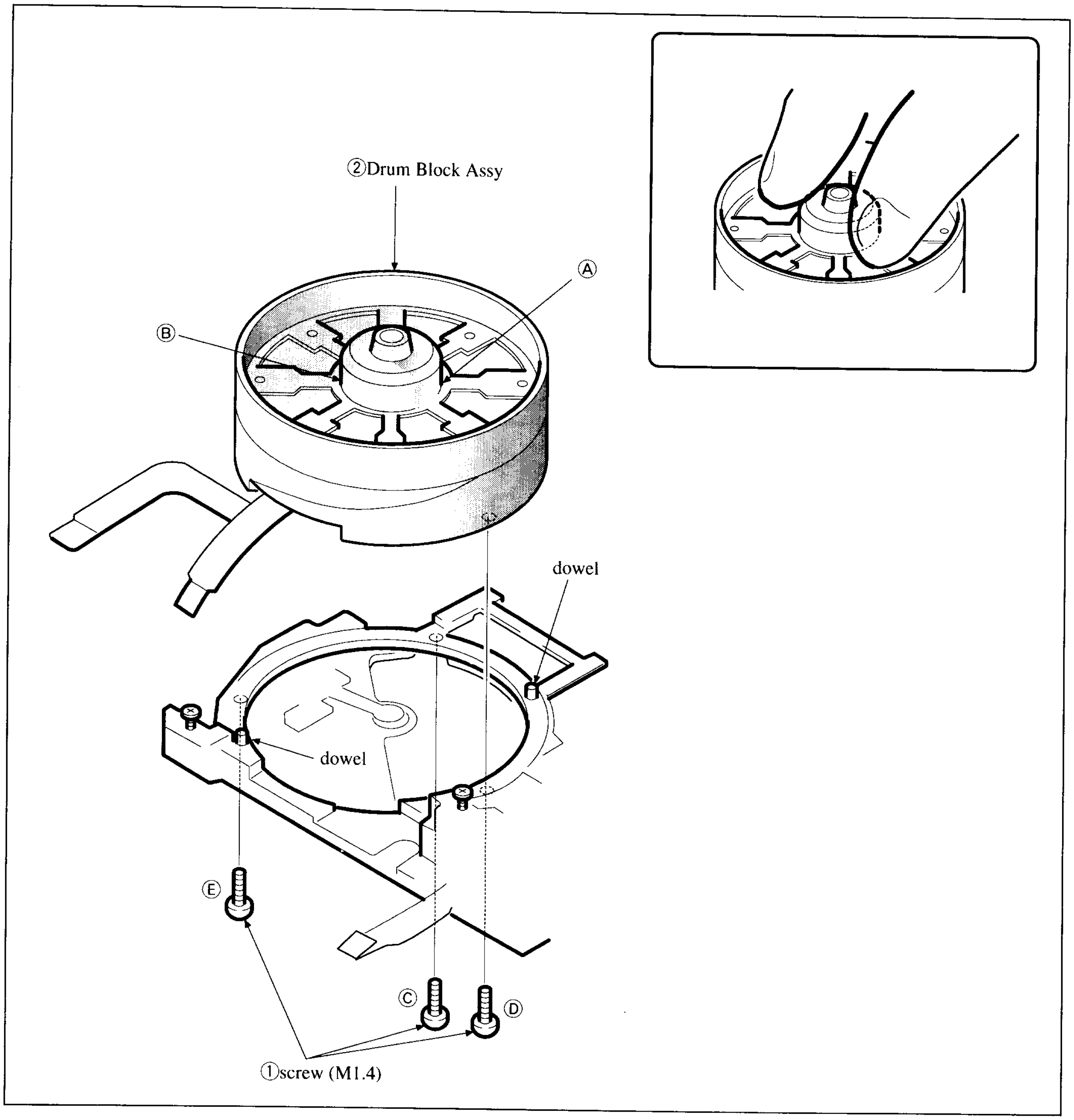


Fig. 6

3-3. Drum Base Block Assy, Shaft Ground (Refer to Fig. 7)

1. Disassembly Procedure

1) Remove the Drum Assy referring to section 3-2.
2) Remove the three screws (M 1.4×2.5) ① and remove the Drum Base Block Assy ②.
3) Remove the screw (M 1.7×1.4) ③ and remove the Shaft Ground ④.

Caution 1: Do not hold the spring portion of the Shaft Ground ④.

Caution 2: The loading motor can be removed while the mechanism is in this state. However, do not move any other mechanical parts (especially gears and cams around the rotary switch) when removing the loading motor. (Refer to 3-11.)

2. Precautions During Re-Assembly

1) Do not touch the spring portion of the Shaft Ground ④.
2) When tightening the three screws (M 1.4×2.5), tighten them in the order of Ⓐ, then Ⓑ, then Ⓒ.
3) After re-assembly is completed, perform the steps in section "4. TAPE PATH ADJUSTMENT".

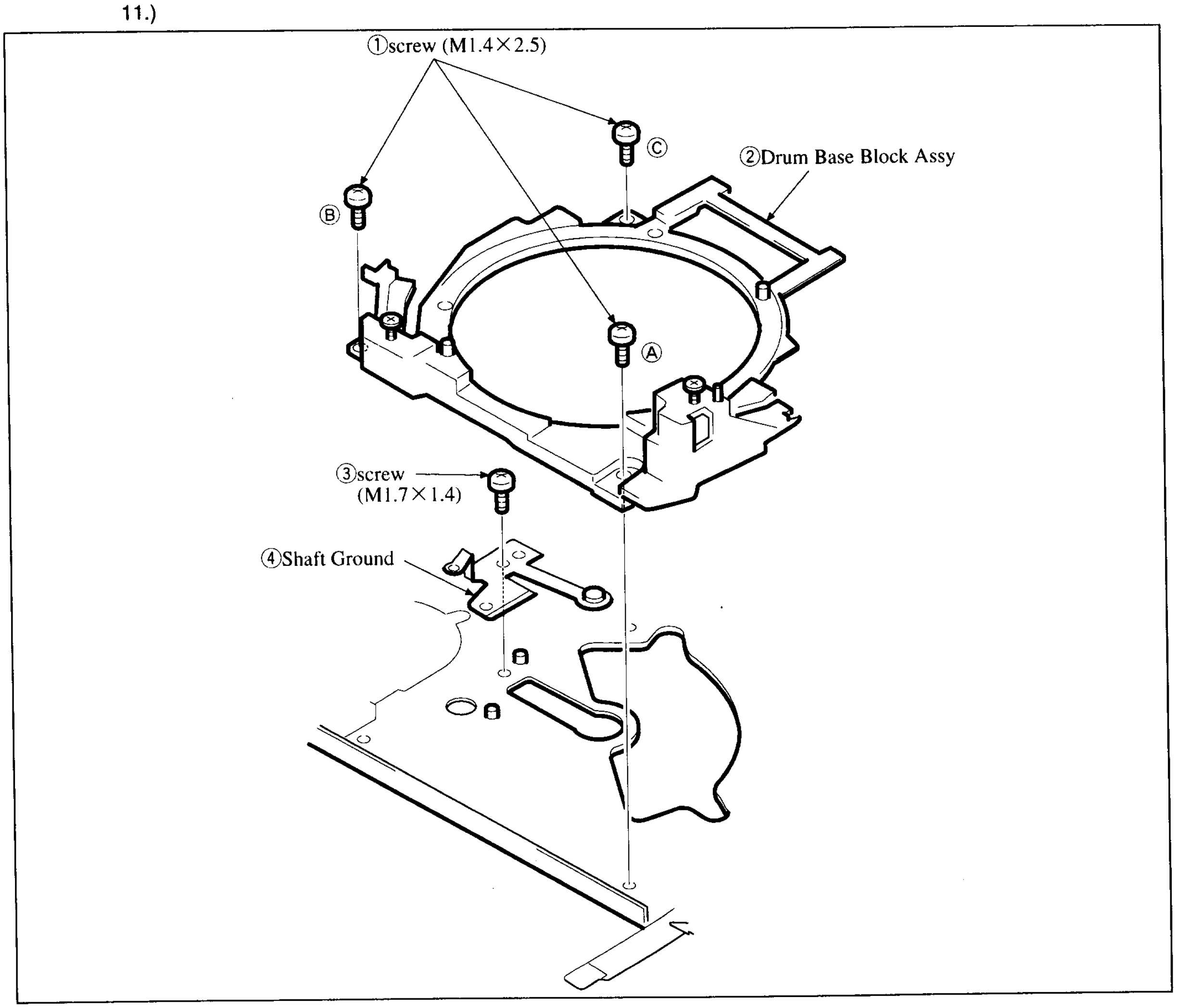


Fig. 7

3-4. Gooseneck Retainer, Gooseneck Gear Assy (Refer to Fig. 8)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the LED ① from the LED holder of the Gooseneck Retainer ③.
(Turn the flexible board 90° outside and remove it upward.)
3) Remove the three screws (M 1.4×2.5) ② and remove the Gooseneck Retainer ③.
4) Remove the stop washer ④ and remove the Gooseneck Gear Assy ⑤.

2. Precautions During Re-Assembly

1) When attaching the Gooseneck Retainer ③, take care that the Gooseneck Retainer ③ does not collide with the tension regulator band. (The tension regulator band must be located inside.)
2) Hook the T-side claw on the guide.

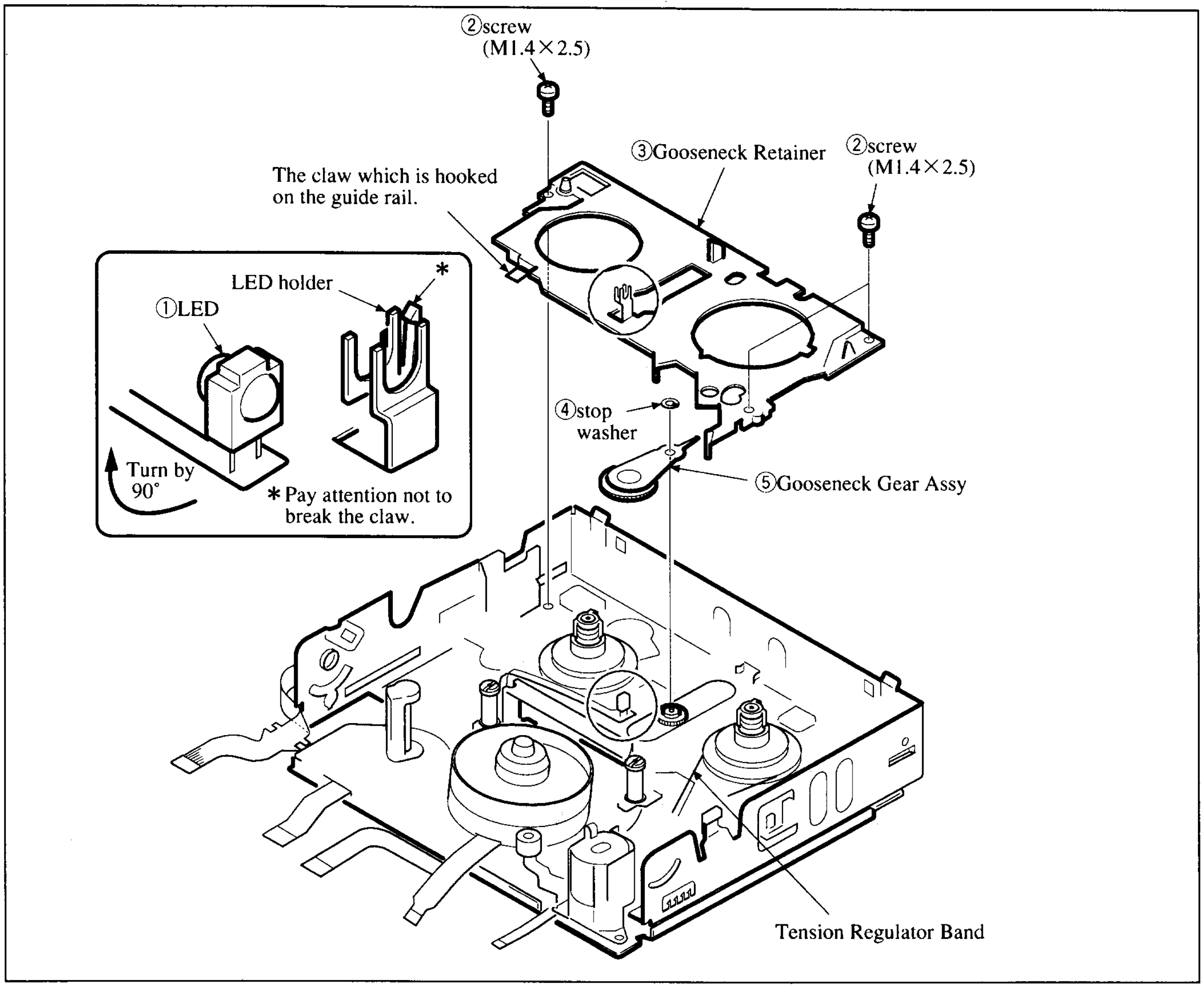

②screw
(M1.4×2.5)
③Gooseneck Retainer
②screw
(M1.4×2.5)
The claw which is hooked on the guide rail.
LED holder
*
①LED
Turn by 90°
* Pay attention not to break the claw.
④stop washer
⑤Gooseneck Gear Assy
Tension Regulator Band

Fig. 8

3-5. LS Chassis Block Assy, Mechanical Chassis Block Assy (Refer to Fig. 9)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the FP-221 flexible board ① from the flexible board holder.
4) Remove the stop ring E1.5 ②.
5) Remove the two screws (M 1.4×2.5) ③ and remove the LS Chassis Block Assy ④ from the Mechanical Chassis Block ⑤ in the direction of the arrow Ⓐ.

Note: The Tension Regulator Plate (2) can easily fall into the Mechanical Chassis Block Assy. Take care not to drop it.

2. Precautions During Re-Assembly

1) Before attaching the LS Chassis Block Assy, confirm that the respective phase-determining holes have been adjusted for correct phase. Also confirm that the specified locations of the Mechanical Chassis Block Assy and the LS Chassis Block Assy are coated with grease SG-055G (Ref. No. J-13). (Refer to Fig. a)
2) When attaching the LS Chassis Block Assy, insert the LS Cam Plate (on the LS chassis side) into the dowel (on the mechanical chassis side). Also insert the TG1 Cam Axis (on the LS chassis side) into the Tension Regulator Plate (2) (on the mechanical chassis side).
3) When attaching these block assemblies, attach them while pressing the TG-1 Arm Assy in the direction toward the TG-2 Guide. (Refer to Fig. b)
4) Pay attention that the TG-1 Arm is not floated.

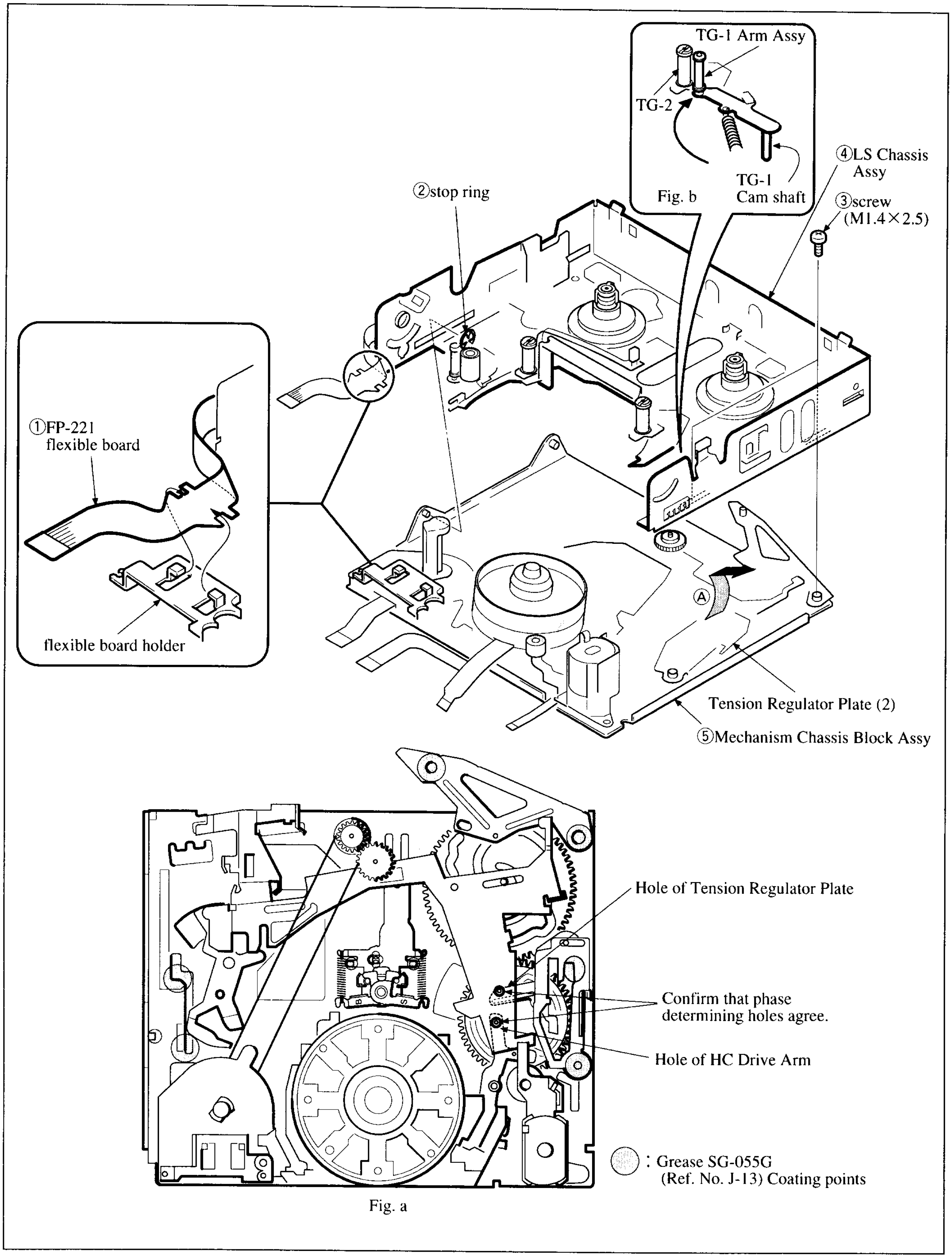
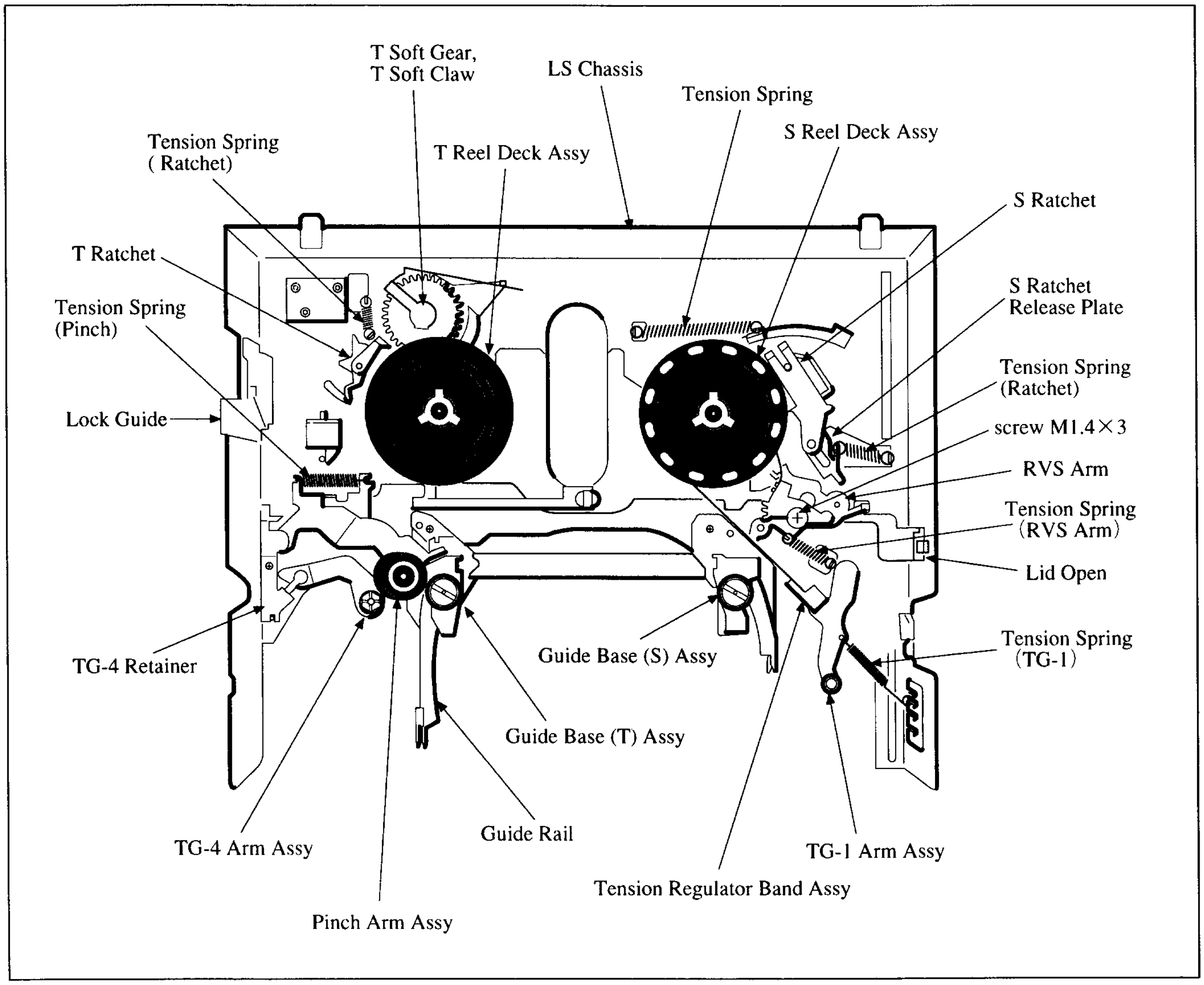

TG-1 Arm Assy
TG-2
TG-1
Cam shaft
Fig. b
④LS Chassis Assy
②stop ring
③screw (M1.4×2.5)
①FP-221 flexible board
flexible board holder
Ⓐ
Tension Regulator Plate (2)
⑤Mechanism Chassis Block Assy
Hole of Tension Regulator Plate
Confirm that phase determining holes agree.
Hole of HC Drive Arm
: Grease SG-055G (Ref. No. J-13) Coating points
Fig. a

Fig. 9

- **PARTS CONSTITUTING THE LS CHASSIS.**



T Soft Gear, T Soft Claw
LS Chassis
Tension Spring
S Reel Deck Assy
Tension Spring (Ratchet)
T Reel Deck Assy
S Ratchet
T Ratchet
S Ratchet Release Plate
Tension Spring (Pinch)
Tension Spring (Ratchet)
Lock Guide
screw M1.4×3
RVS Arm
Tension Spring (RVS Arm)
Lid Open
Tension Spring (TG-1)
TG-4 Retainer
Guide Base (S) Assy
Guide Base (T) Assy
Guide Rail
TG-4 Arm Assy
TG-1 Arm Assy
Tension Regulator Band Assy
Pinch Arm Assy

Fig. 10

3-6. T Reel Table Assy, T Ratchet, T Soft Gear Block Assy (Refer to Fig. 11)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the claw of the T Reel Deck Assy ① from the chassis and remove the T Reel Deck Assy from its shaft.
4) Remove the Tension Spring (Ratchet) ② from the LS Chassis and turn the T Ratchet ③ in the direction of the arrow Ⓐ and remove it .
5) Turn the T Soft Gear Block Assy ④ in the direction of the arrow Ⓑ and remove it .

2. Precautions During Re-Assembly

1) Confirm that the protrusions of both the T Soft Gear Block Assy and T Ratchet are securely locked to the LS Chassis.
2) Be careful not to deform the claw.

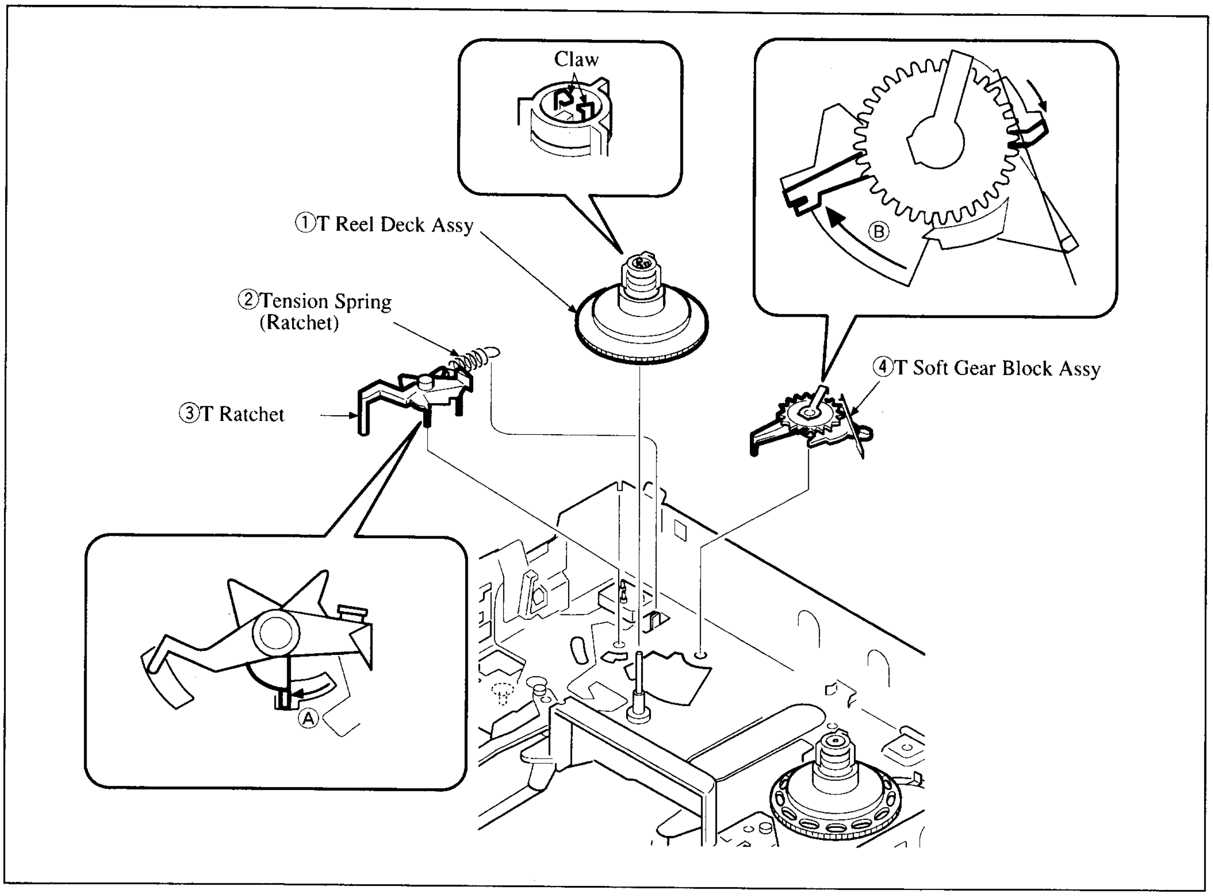


Fig. 11

3-7. Tension Regulator Band Assy, TG1 Arm Assy, S Reel Table Assy, S Ratchet, S Ratchet Release Plate, RVS Arm (Refer to Fig. 12)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the Tension Spring (TG1) ① from the LS Chassis.
4) Remove the screw (M 1.4×3) ② and remove the Tension Adjustment Block of the Tension Regulator Band Assy ④ form RVS Arm.
5) Release the S Ratchet ⑥ in the direction of the arrow Ⓐ and remove the Tension Regulator Band (while taking care not to bend the band) from the S Reel.
6) Remove the TG1 Arm Assy ③ from the LS Chassis, then remove the claw of the Tension Regulator Band Assy ④. (Refer to Fig. a)
7) Remove the claw of the S Reel Deck Assy ⑤ from the chassis and remove the S Reel Deck Assy from its shaft.
8) Remove the S Ratchet ⑥. (Because it is press-fitted, insert tip of screwdriver into the center of rotation and remove it.
9) Remove the Tension Spring (ratchet) ⑦ from the LS Chassis and remove the S Ratchet Release Plate ⑧.
10) Remove the Tension Spring ⑨ from the LS Chassis and remove the RVS Arm ⑩ by turning it..

2. Precautions During Re-Assembly

1) Confirm that the dowel of the S Ratchet Release Plate is inserted into the groove of the S ratchet and confirm that the center of the ratchet is press-fitted into bottom of the shaft. (It can be used again.)
2) When attaching the Tension Regulator Band Assy, take care not to bend it.
3) Pay attention that oil or grease is not spit on the surface of the Tension Regulated Band. (Pay attention also not to touch it with hand directly.)
4) Confirm that the tension regulator band is correctly inserted into the groove of the S Reel Deck Assy ⑤. (Refer to Fig. b)
5) When securing the Tension Adjustment Block using the screw, press it toward the position which gives the least tension, then tighten the fixing screw.
6) Before attaching the TG1 Arm Assy, coat the LS Chassis TG1 boss with oil (1/2 drop).
7) Do not touch the tape guide of the TG1 Arm Assy with bare hands.
8) Confirm that the claw of the S Reel Deck Assy is not deformed.

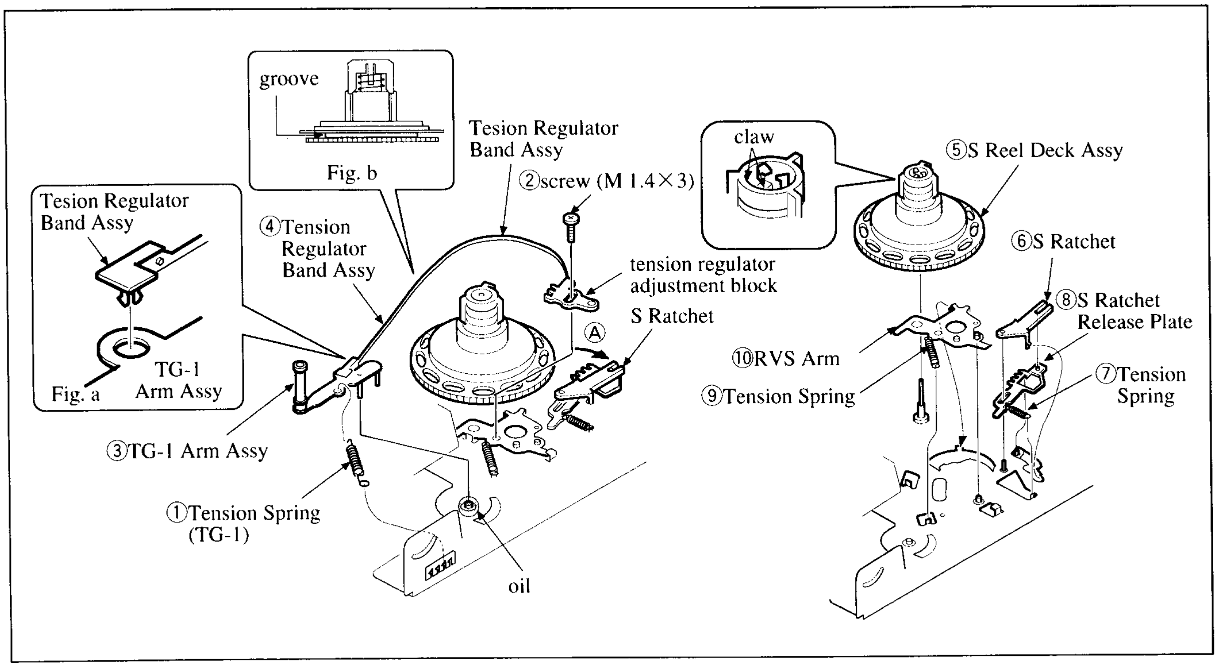

groove
Fig. b
Tesion Regulator Band Assy
②screw (M 1.4×3)
claw
⑤S Reel Deck Assy
Tesion Regulator Band Assy
④Tension Regulator Band Assy
⑥S Ratchet
tension regulator adjustment block
S Ratchet
Ⓐ
⑧S Ratchet Release Plate
⑩RVS Arm
TG-1 Arm Assy
Fig. a
⑨Tension Spring
⑦Tension Spring
③TG-1 Arm Assy
①Tension Spring (TG-1)
oil

Fig. 12

3-8. Pinch Arm Assy, TG4 Arm Block Assy (Refer to Fig. 13)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) Remove the Torsion Spring (pinch) ① from an end of Pinch Arm and hook it on the cut-out Ⓐ of the LS Chassis.
5) Remove the screw (M 1.4×2.5) ② and remove the TG4 Retainer ③.
6) Remove the TG4 Arm Block Assy ④ and remove the Torsion Spring ⑤ while paying attention to the Torsion Spring ⑤.
7) Remove the Pinch Arm Assy ⑥. (Caution: The Pinch Press Roller is easy to drop. Pay attention not to drop it.)
8) Remove the Torsion Spring (pinch) ① from the cut-out of the LS Chassis in the order of Ⓐ then Ⓑ.

2. Precautions During Re-Assembly

1) Before attaching these parts, coat the LS chassis pinch arm boss and TG4 arm boss with grease SG-055G (Ref. No. J-13).
2) Do not touch the tape guide of the TG4 Arm Block Assy and roller of the Pinch Arm Assy with bare hand.
3) After coating the Pinch Press Shaft of the Pinch Arm Assy ③ with grease SG-055G (Ref. No. J-13), attach the Pinch Press Roller.

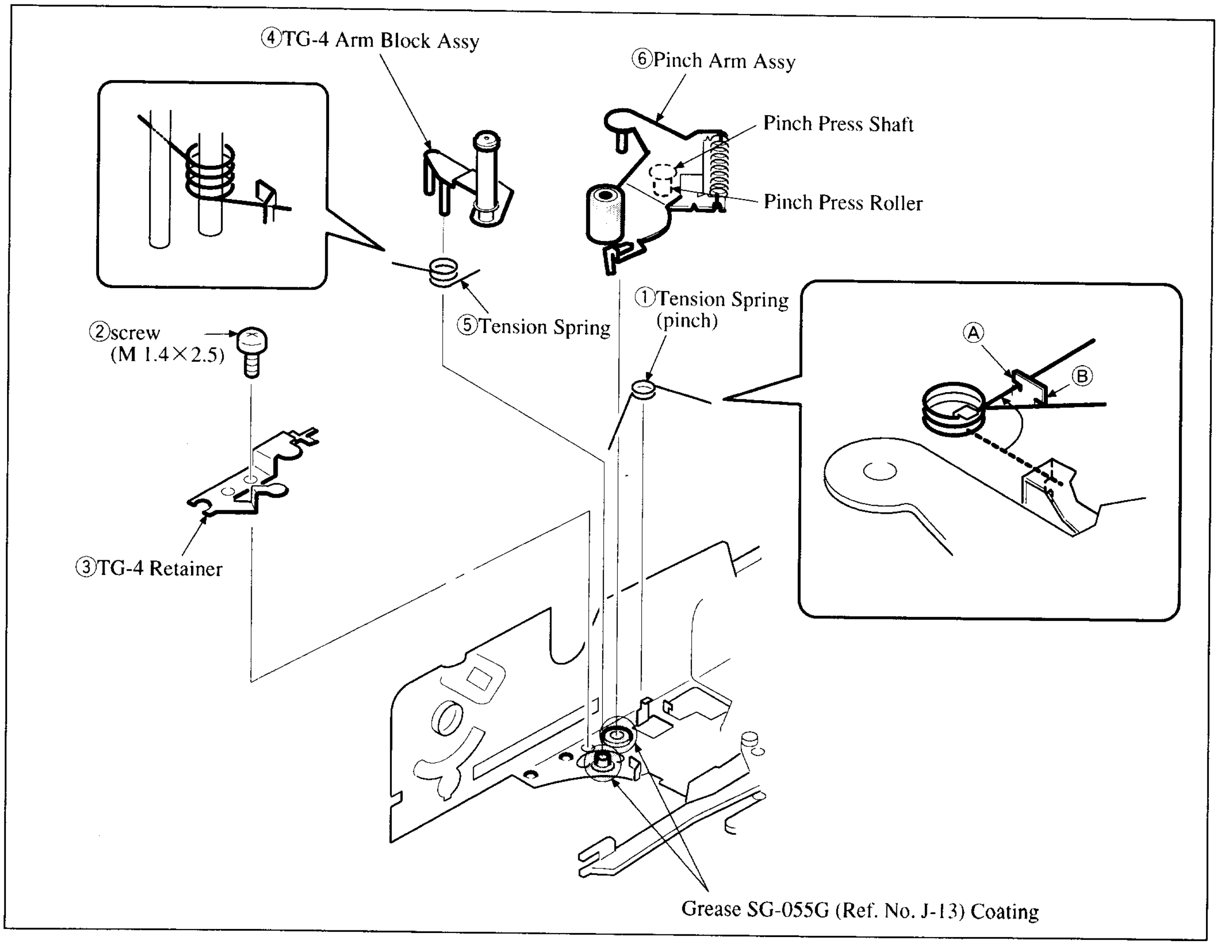

④TG-4 Arm Block Assy
⑥Pinch Arm Assy
Pinch Press Shaft
Pinch Press Roller
⑤Tension Spring
①Tension Spring (pinch)
②screw (M 1.4×2.5)
③TG-4 Retainer
Ⓐ
Ⓑ
Grease SG-055G (Ref. No. J-13) Coating

Fig. 13

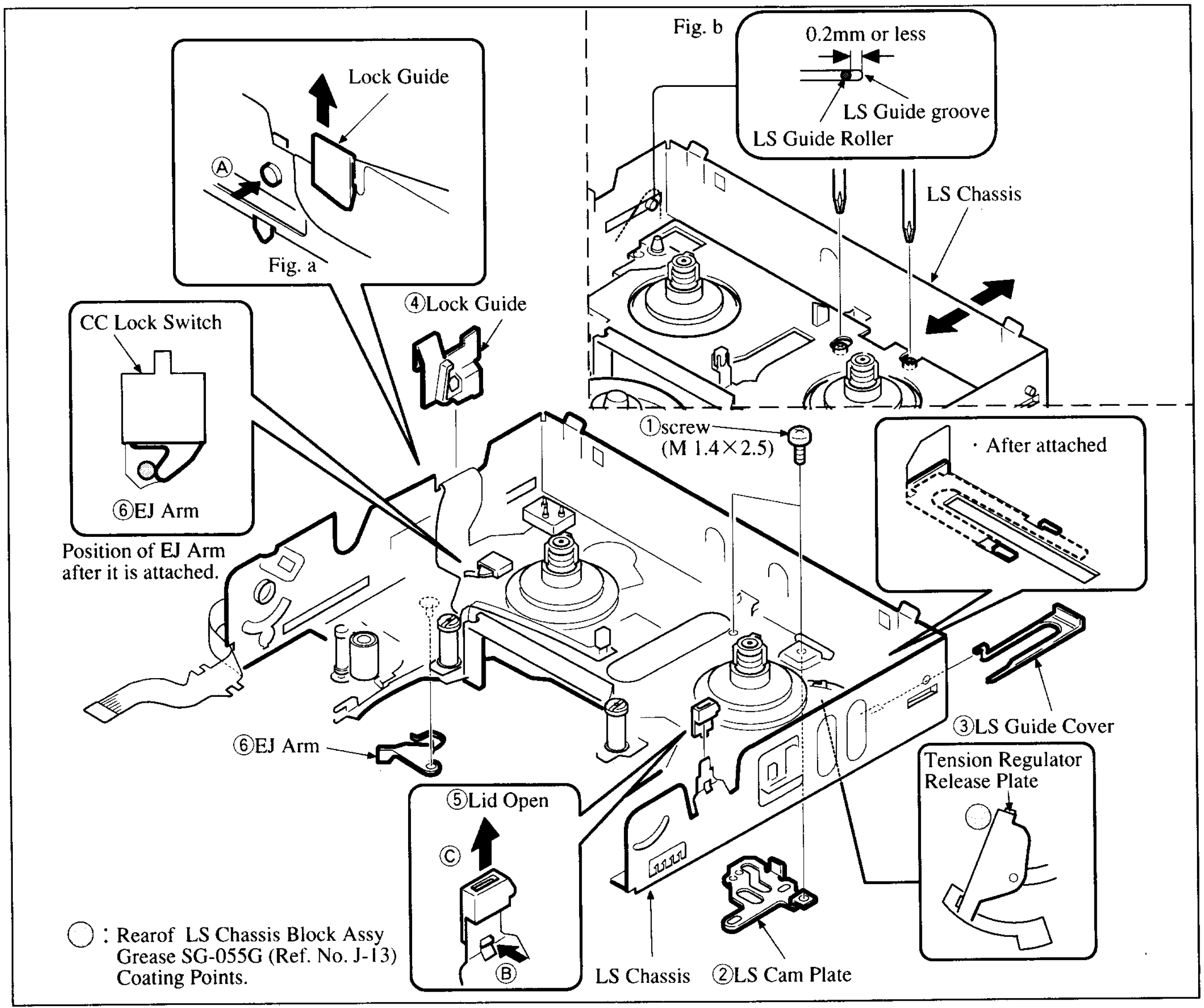
3-9. LS Cam Plate, LS Guide Cover, Lid Opener, EJ Arm, Lock Guide
(Refer to Fig. 14)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) Remove the two screws (M 1.4×2.5) ① and remove the the LS Cam Plate ②.
   In this state, write a mark on the screw ① and on the LS Chassis indicating the position of the LS Cam Plate which helps during re-assembly.
5) Remove the LS Guide Cover ③.
6) Remove the Lock Guide ④ in the upward direction. (Refer to Fig. a)
7) Remove the Lid Open ⑤ in the direction of the arrow Ⓒ while pushing Ⓑ portion .
8) Remove the EJ Arm ⑥ . (The EJ Arm ⑥ is press-fitted. If the EJ Arm ⑥ is not damaged, it is not necessary to replace.)

2. Precautions During Re-Assembly

1) After the captioned parts are attached, confirm that the respective claws and dowels are engaged completely.
2) If the EJ Arm ⑥ is removed, be sure to replace it with the new replacement EJ Arm.
3) If any mark is not written when removing the LS Cam Plate ②, adjust and attack it as shown in Fig. b.


Lock Guide
Ⓐ
Fig. a
④Lock Guide
CC Lock Switch
⑥EJ Arm
Position of EJ Arm after it is attached.
Fig. b
0.2mm or less
LS Guide groove
LS Guide Roller
LS Chassis
①screw (M 1.4×2.5)
· After attached
③LS Guide Cover
Tension Regulator Release Plate
⑥EJ Arm
⑤Lid Open
Ⓒ
Ⓑ
LS Chassis
②LS Cam Plate

○ : Rearof LS Chassis Block Assy Grease SG-055G (Ref. No. J-13) Coating Points.

Fig. 14

3-10. Guide Base (S) and (T) Block Assemblies, Guide Rail (Refer to Fig. 15)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) While pushing the GB Stoppers (S) and (T) in the direction of arrow Ⓐ, press the guide arm in the direction of the arrow Ⓑ, and turn the Guide Base (S) and (T) Block Assemblies : ① and ② in the direction of the arrow Ⓒ respectively, and remove them.
5) Remove the two screws (M 1.4×2.5) ③ and remove the the Guide Rail Assy ④.
6) Remove the Stopper (S) and (T) : ⑤ and ⑥, then remove the GB Stopper S and T: ⑦ and ⑧.

2. Precautions During Re-Assembly

1) Pay attention not to deform the Guide Rail.
2) Do not touch the tape guide of the Guide Base (S) and (T) Block Assemblies with bare hand.
3) Pay attention not to deform the Stoppers (S) and (T).
4) When attaching the Guide Base (S) and (T) Blocks to the Guide Rail, move back the Guide Bases until the GB Stoppers (S) and (T) are locked. ("Click" sounds.)
5) After the captioned parts are attached, perform section "4. TAPE PATH ADJUSTMENT".

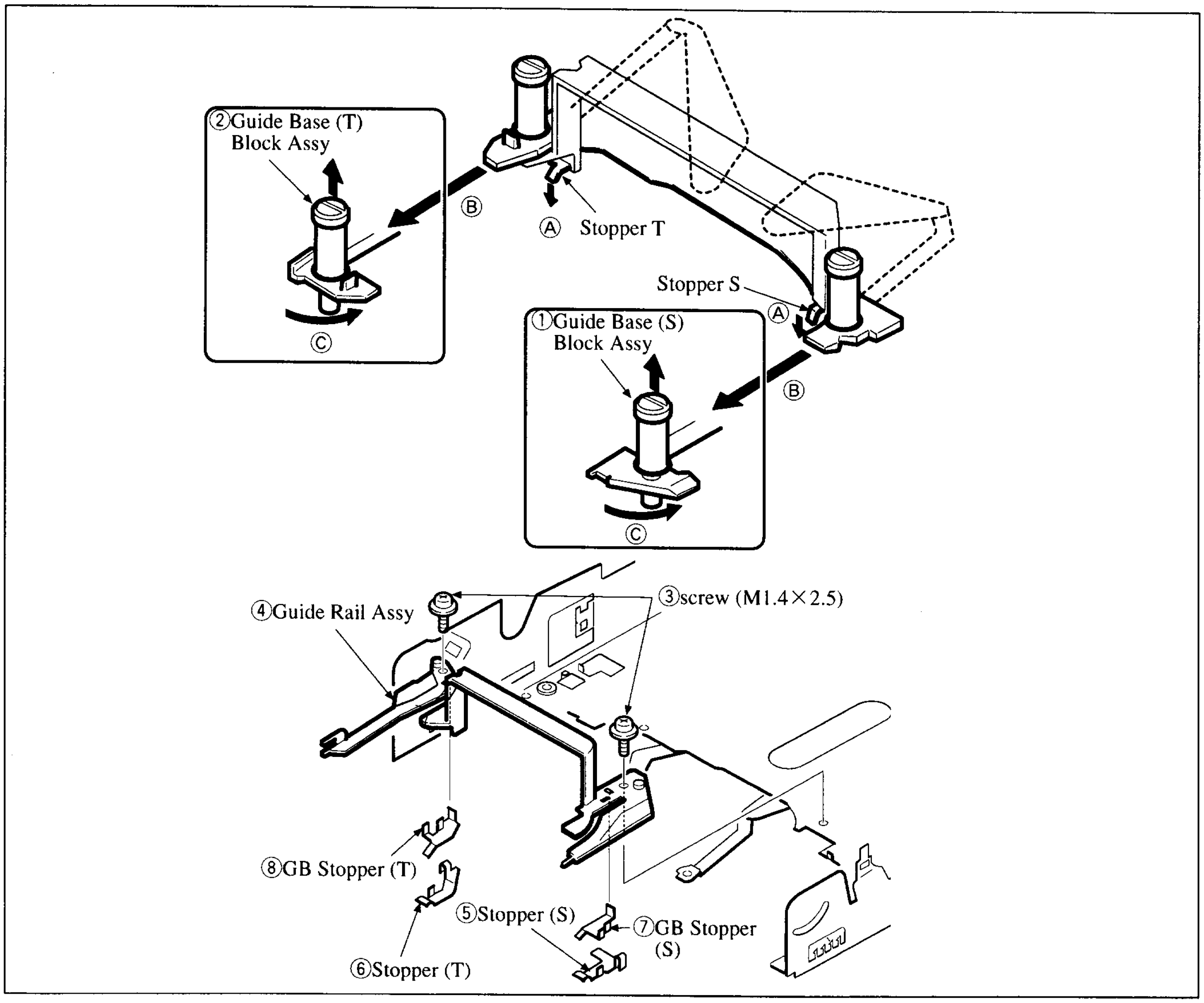

②Guide Base (T)
Block Assy
Ⓑ
Ⓒ
Ⓐ Stopper T
Stopper S
Ⓐ
①Guide Base (S)
Block Assy
Ⓑ
Ⓒ
④Guide Rail Assy
③screw (M1.4×2.5)
⑧GB Stopper (T)
⑤Stopper (S)
⑦GB Stopper
(S)
⑥Stopper (T)

Fig. 15

- **PARTS CONSTITUTING THE MECHANISM CHASSIS**

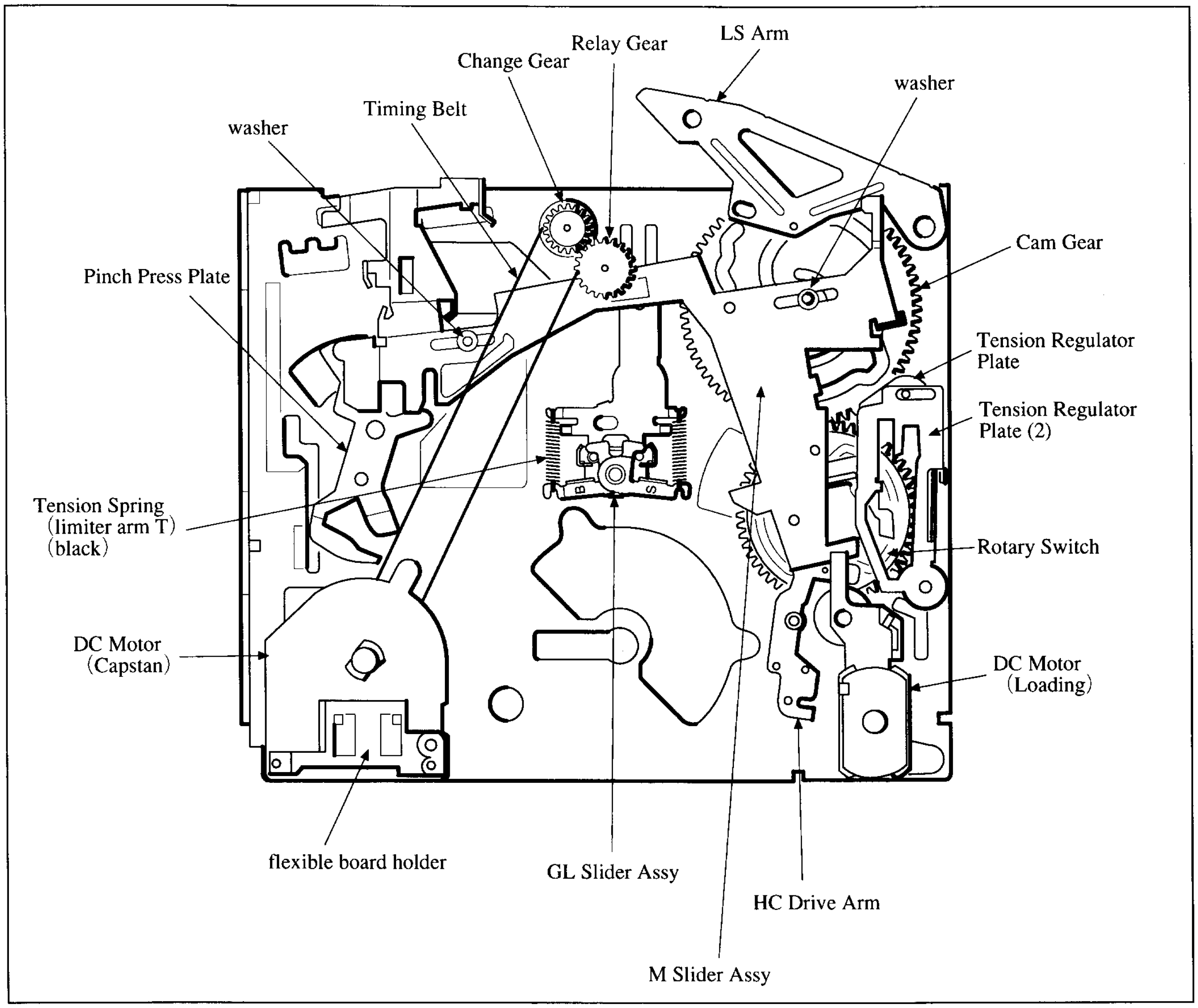

Relay Gear
LS Arm
Change Gear
washer
Timing Belt
washer
Cam Gear
Pinch Press Plate
Tension Regulator Plate
Tension Regulator Plate (2)
Tension Spring (limiter arm T) (black)
Rotary Switch
DC Motor (Capstan)
DC Motor (Loading)
flexible board holder
GL Slider Assy
HC Drive Arm
M Slider Assy

Fig.16

3-11. DC Motor Assy (Loading)
(Refer to Fig. 17)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove soldering from the Ⓐ portion.
8) Remove the screw (M 1.4×2.5) ① and remove the Motor Holder Block Assy ② from the mechanism chassis along with the claw beneath the Motor Holder Block Assy as shown by the arrow Ⓑ.
9) Remove the Motor Shield ③ in the direction of the arrow Ⓒ (by opening the two ★ star marked points).
10) Release the claw on top of the Motor Holder ⑤ and remove the DC Motor Assy ④ in the direction of the arrow Ⓓ.
11) Remove the Motor Holder Sleeve ⑥, Gear A⑦ and Worm Shaft ⑧ in this order.

2. Precautions During Re-Assembly

1) Before attaching the Gear A ⑥, coat the Retainer Shaft Ⓔ with grease SG-055G (Ref. No. J-13).
2) After assembling the Motor Holder Block Assy, coat the six locations shown by Fig. a with grease SG-055G (Ref. No. J-13).
3) The HC Drive Arm is easy to drop. Confirm that it is attacked referring to Fig. 19.

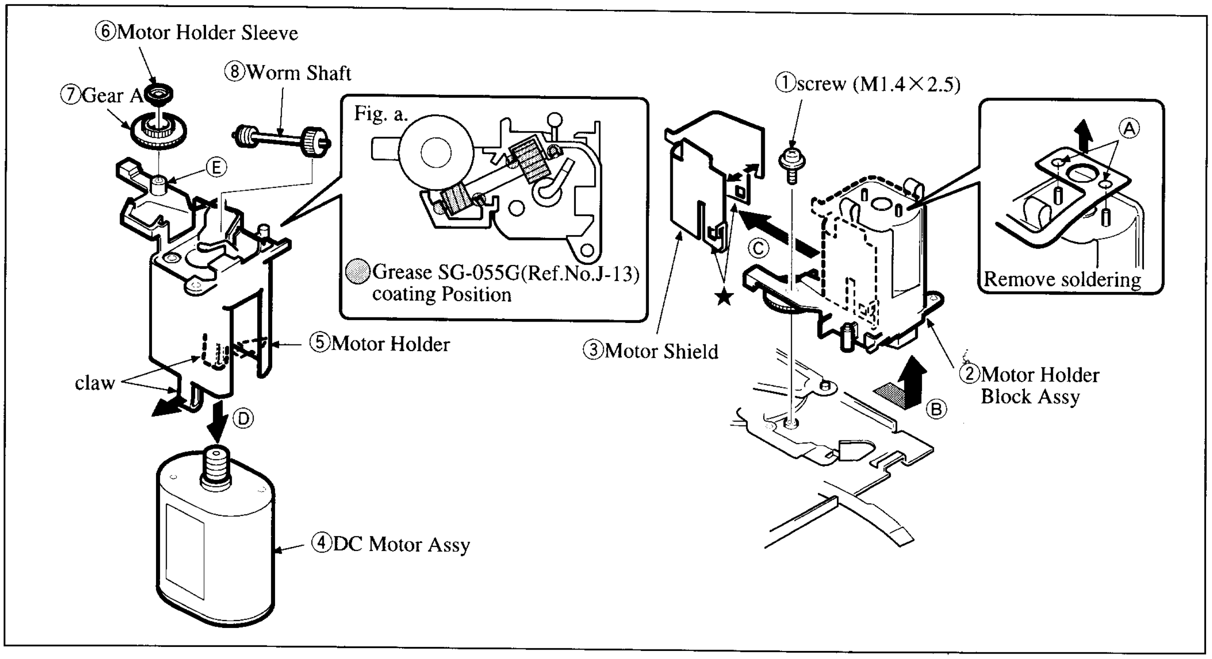

⑥Motor Holder Sleeve
⑦Gear A
⑧Worm Shaft
Ⓔ
Fig. a.
●Grease SG-055G(Ref.No.J-13) coating Position
⑤Motor Holder
claw
Ⓓ
④DC Motor Assy
③Motor Shield
Ⓒ
★
①screw (M1.4×2.5)
Ⓐ
Remove soldering
②Motor Holder Block Assy
Ⓑ

Fig. 17

3-12. Tension Regulator Plate 2, Relay Gear, M Slider Assy (Refer to Fig. 18)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC motor referring to section 3-11.
8) Remove the Tension Regulator Plate 2 ①.
9) Remove the Relay Gear ②.
10) Remove the two washers ③. Remove the M Slider Assy ④. At the point, confirm that the LS Roller ⑤ is not dropped.

2. Precautions During Re-Assembly

1) Before attaching the M Slider Assy ④, coat the LS Roller Shaft Ⓐ on the back of the M Slider Assy, the Pinch Press Plate Shaft Ⓑ and the mechanism chassis M Slider Axis Ⓒ with grease SG-055G (Ref. No. J-13). (Refer to Fig. b)
2) While confirming the phase-determining holes, attach the M Slider Assy ④ while paying attention to the claw.
3) Attach the Tension Regulator Plate 2 ① inside the Tension Regulator Plate. (Refer to the asterisk * Marked portion of Fig. a)
4) Before attaching the Relay Gear ②, coat the mechanism chassis Relay Gear Axis Ⓓ with grease SG-055G (Ref. No. J-13).

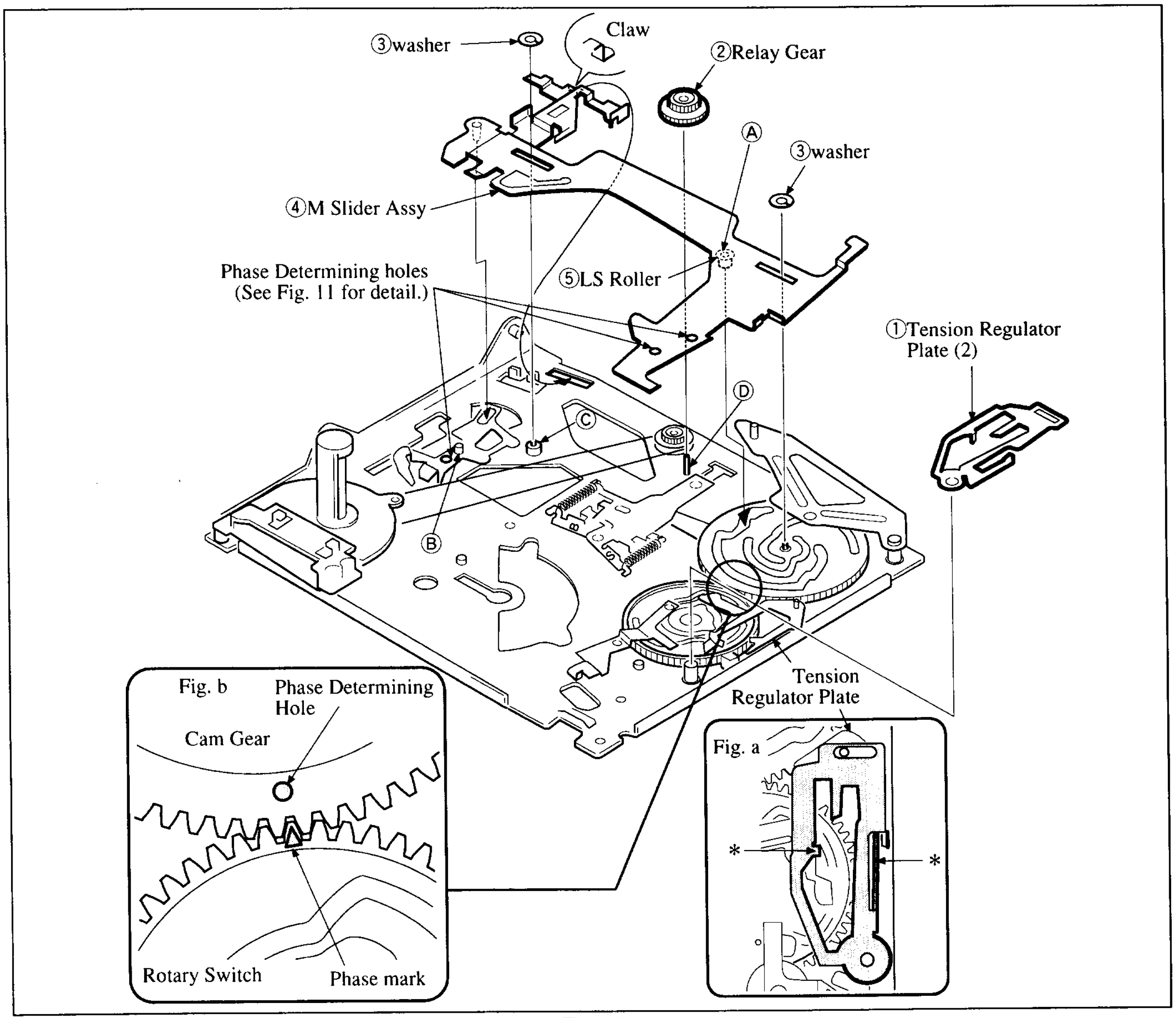

③washer
Claw
②Relay Gear
Ⓐ
③washer
④M Slider Assy
Phase Determining holes (See Fig. 11 for detail.)
⑤LS Roller
①Tension Regulator Plate (2)
Ⓓ
Ⓒ
Ⓑ
Tension Regulator Plate
Fig. b
Phase Determining Hole
Cam Gear
Rotary Switch
Phase mark
Fig. a
*
*

Fig. 18

3-13. LS Arm, HC Drive Arm, Pinch Press Plate, Tension Regulator Plate (Refer to Fig. 19)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm ①. At this point, confirm that the LS Roller ② is not dropped.
10) Remove the HC Drive Arm ③, Pinch Press Plate ④ and Tension Regulator Plate ⑤.

2. Precautions During Re-Assembly

1) Before attaching the captioned parts, confirm that phases of the Cam Gear and the Rotary Switch agree. (See Fig. a.)
2) Insert the dowel of the Tension Regulator Plate ⑤ into the groove outside the rotary switch.
3) Before attaching the Pinch Press Plate ④, check for grease on the mechanism chassis Pinch Press Plate Shaft Ⓐ. If grease cannot be found, coat it with grease SG-055G (Ref. No. J-13). After attaching the Pinch Press Plate ④, align its phase hole until it agrees with the phase-determining hole on the mechanism chassis.
4) Insert the dowel of the HC Drive Arm ③ into the groove inside the rotary switch.
5) Before attaching the LS Arm ①, coat the LS roller shaft of the LS Arm ① with grease SG-055G (Ref. No. J-13).

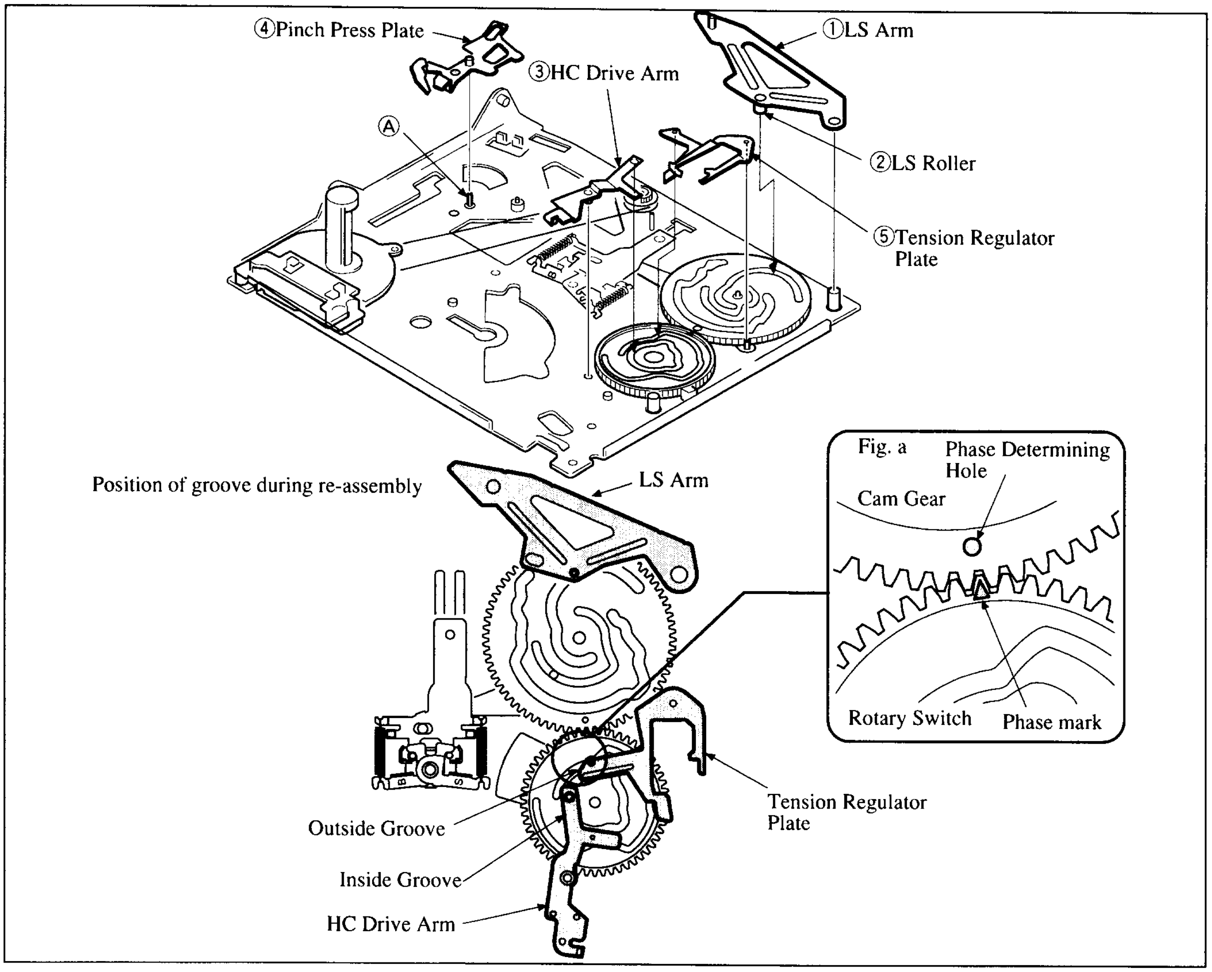

④Pinch Press Plate
③HC Drive Arm
①LS Arm
Ⓐ
②LS Roller
⑤Tension Regulator Plate
Position of groove during re-assembly
LS Arm
Fig. a
Phase Determining Hole
Cam Gear
Rotary Switch
Phase mark
Tension Regulator Plate
Outside Groove
Inside Groove
HC Drive Arm

Fig. 19

3-14. Cam Gear (Refer to Fig. 20)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm and Tension Regulator Plate referring to section 3-13.
10) Remove the Cam Gear ①.

2. Precautions During Re-Assembly

1) Before attaching the Cam Gear ①, align the phase mark on the rotary switch until it agrees with the phase-determining hole Ⓐ on the mechanism chassis, and align the GL Arm's phase mark Ⓑ until it agrees with the phase-determining hole Ⓐ on the mechanism chassis. Coat the mechanism's chassis Gear Axis Ⓐ with grease SG-055G (Ref. No. J-13).
2) Attach the Cam Gear ① so that its phase hole agrees with the phase mark on the rotary switch. (Refer to Fig. a)
3) After the Cam Gear ① is attached, coat the GL Arm Axis Block of the cam gear with grease SG-055G (Ref. No. J-13).

Reference : The phase marks of the Cam Gear and Rotary Switch can also be checked from the rear side of mechanism chassis. It means that the phase can be confirmed after mechanism deck is fully re-assembled.

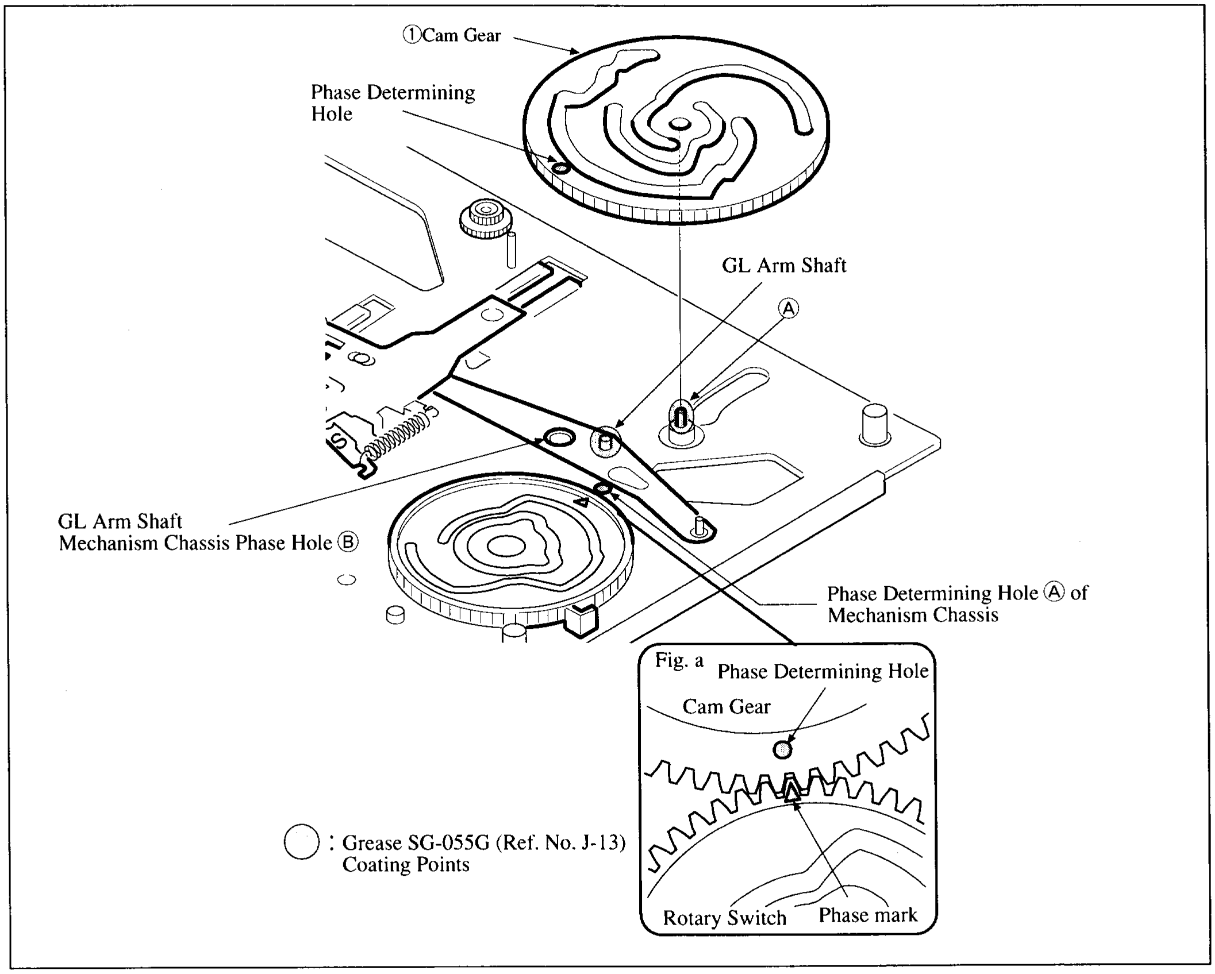

①Cam Gear
Phase Determining Hole
GL Arm Shaft
Ⓐ
GL Arm Shaft
Mechanism Chassis Phase Hole Ⓑ
Phase Determining Hole Ⓐ of Mechanism Chassis
Fig. a
Phase Determining Hole
Cam Gear
Rotary Switch
Phase mark
○ : Grease SG-055G (Ref. No. J-13) Coating Points

Fig. 20

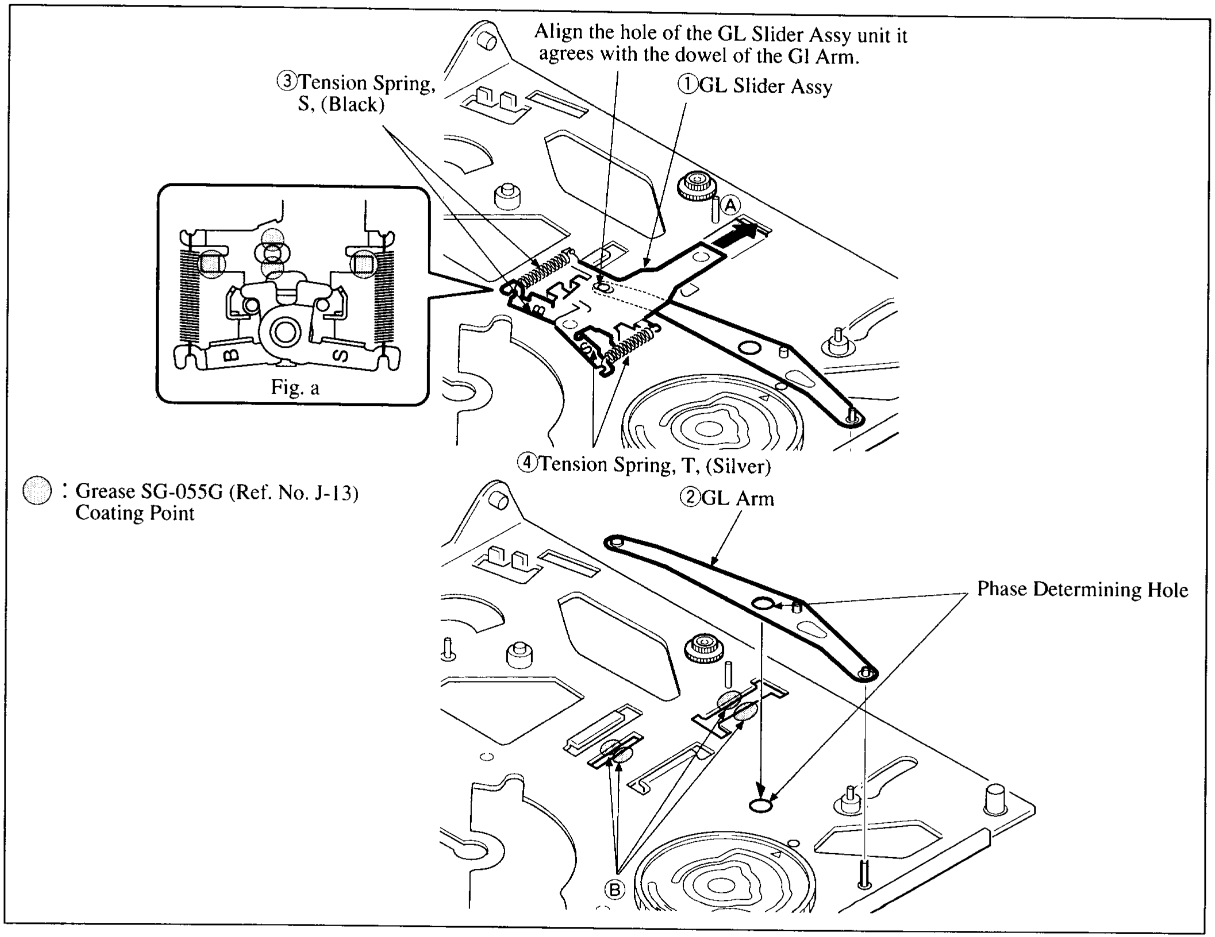
3-15. GL Slider Assy, GL Arm (Refer to Fig. 21)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm and Tension Regulator Plate referring to section 3-13.
10) Remove the Cam Gear referring to section 3-14.
11) Remove the GL Slider Assy ① by sliding it in the direction of the arrow Ⓐ.
12) Remove the GL Arm ②.

2. Precautions During Re-Assembly

1) The Tension Spring T③ is colored black and the Tension Spring S④ is colored silver.
2) Coat the position shown in Fig. a of the GL Slider Assy ① with grease SG-055G (Ref. No. J-13).
3) Coat the four points Ⓑ where GL slider is attached on the mechanism chassis with grease SG-055G (Ref. No. J-13).
4) After attaching the GL Arm ② and the GL Slider Assy, align the GL arm phase hole until it agrees with the phase-determining hole on the mechanism chassis.



Align the hole of the GL Slider Assy unit it agrees with the dowel of the Gl Arm.
③Tension Spring, S, (Black)
①GL Slider Assy
Ⓐ
B
S
Fig. a
④Tension Spring, T, (Silver)
②GL Arm
Phase Determining Hole
Ⓑ
○ : Grease SG-055G (Ref. No. J-13) Coating Point

Fig. 21

3-16. Rotary Switch (Refer to Fig. 22)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm, Tension Regulator Plate, HC Drive Arm and Pinch Press Plate referring to section 3-13.
10) Remove the Cam Gear referring to section 3-14.
11) Remove soldering the portion Ⓐ on the rear of the Rotary Switch. (Pay attention at this moment that the GL Slider and GL Arm do not drop.)
12) While lifting up the portion Ⓑ about 1 mm (pay attention not to break it), hold the portion Ⓒ and turn it in the direction of the arrow Ⓓ to remove the Rotary Switch.

2. Precautions During Re-Assembly

1) Before attaching the Rotary Switch by soldering on the FP-220 board, insert the portion Ⓑ dowel into the hole on the mechanism chassis. Confirm that the three claws are engaged with the mechanism chassis.

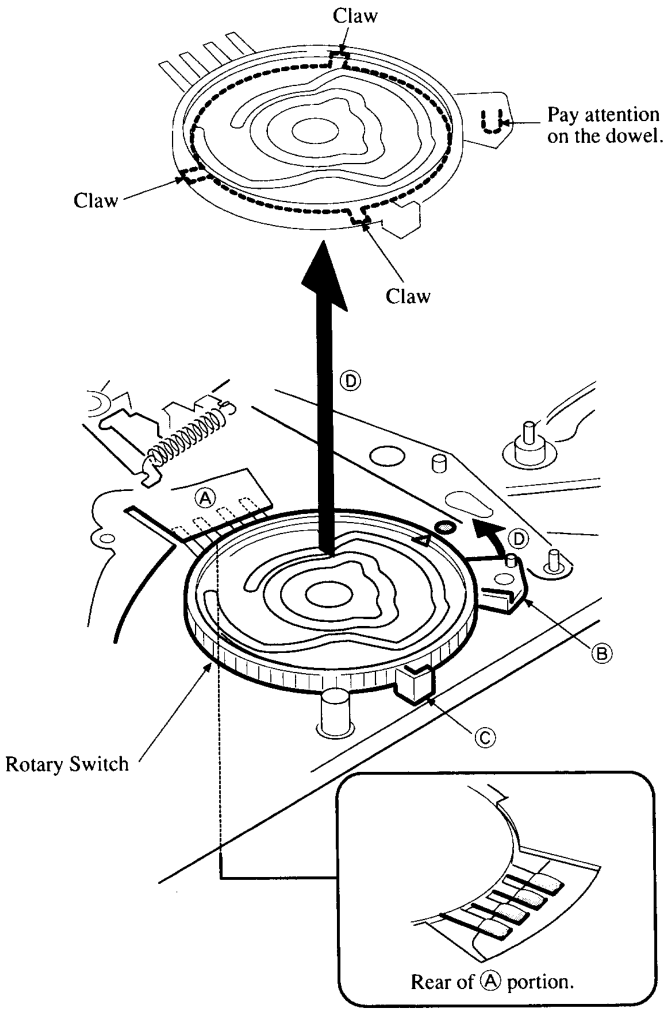


Fig. 22

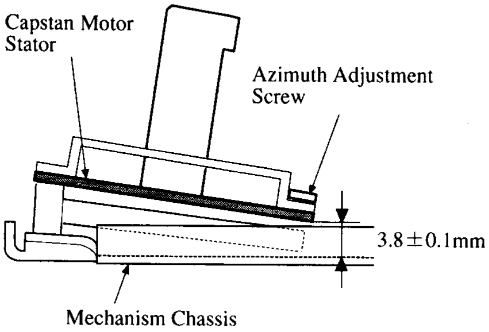
3-17. Capstan Motor (Refer to Fig. 23)

1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the Pinch Press Plate referring to section 3-13.
10) Remove the screw (M 1.4×6.7) ① and remove the Flexible Board Holder ②.
11) Remove the two screws (M 1.4×6.7) ③ and remove the Capstan Motor ④, Timing Belt ⑤ and Capstan Spacer ⑥.
12) Remove the washer ⑦ and remove the Changer Gear ⑧.

2. Precautions During Re-Assembly

1) Confirm that the timing belt is not twisted.
2) Do not touch the capstan with bare hand.
3) Lubricate the mechanism chassis's Change Gear shaft Ⓐ.
4) After attaching the Capstan Motor, perform the capstan azimuth adjustment.


Capstan Motor Stator
Azimuth Adjustment Screw
3.8±0.1mm
Mechanism Chassis

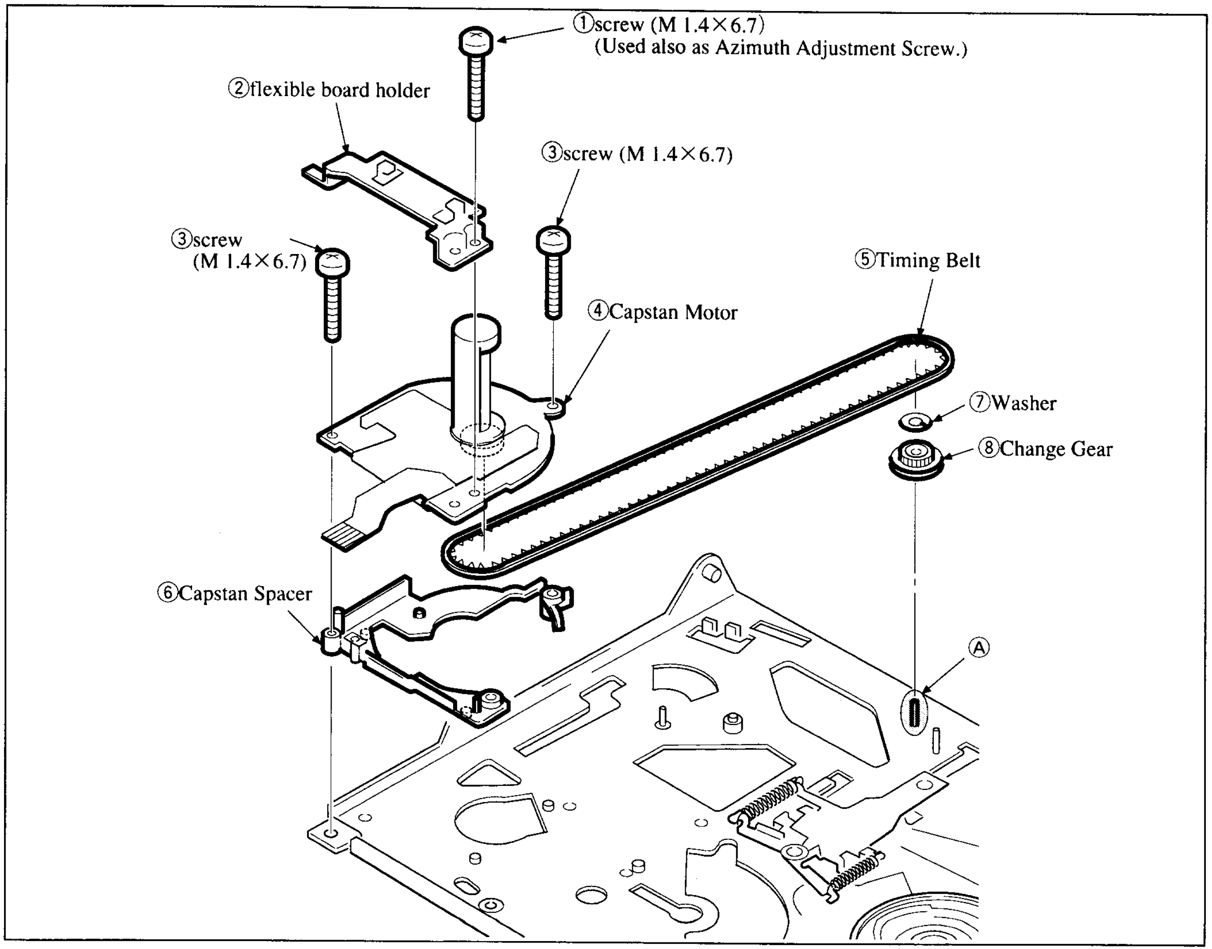

①screw (M 1.4×6.7)
(Used also as Azimuth Adjustment Screw.)
②flexible board holder
③screw (M 1.4×6.7)
③screw
(M 1.4×6.7)
⑤Timing Belt
④Capstan Motor
⑦Washer
⑧Change Gear
⑥Capstan Spacer
Ⓐ

Fig. 23

3-18. Tension Regulator Position Adjustment (Refer to Fig.24)

1. Adjustment Procedure

1) Insert a cassette Tape and run the Tape in PB mode.
2) While tape is running, confirm that the distance between the LS Chassis and TG-1 Guide's top flange is 8.3mm.
3) If not, proceed to step 4).
4) Loosen the screw ① (M 1.4×3).
5) If the TG-1 Guide is located inside the specified position, move position of the Tension Regulator Band Assy using the FWD B.T. Adjustment tool screwdriver (Ref. No. J-9) as shown in the direction of the arrow Ⓐ. If it is located outside, move it in the direction of the arrow Ⓑ.
6) Tighten the screw ① (M 1.4×3).

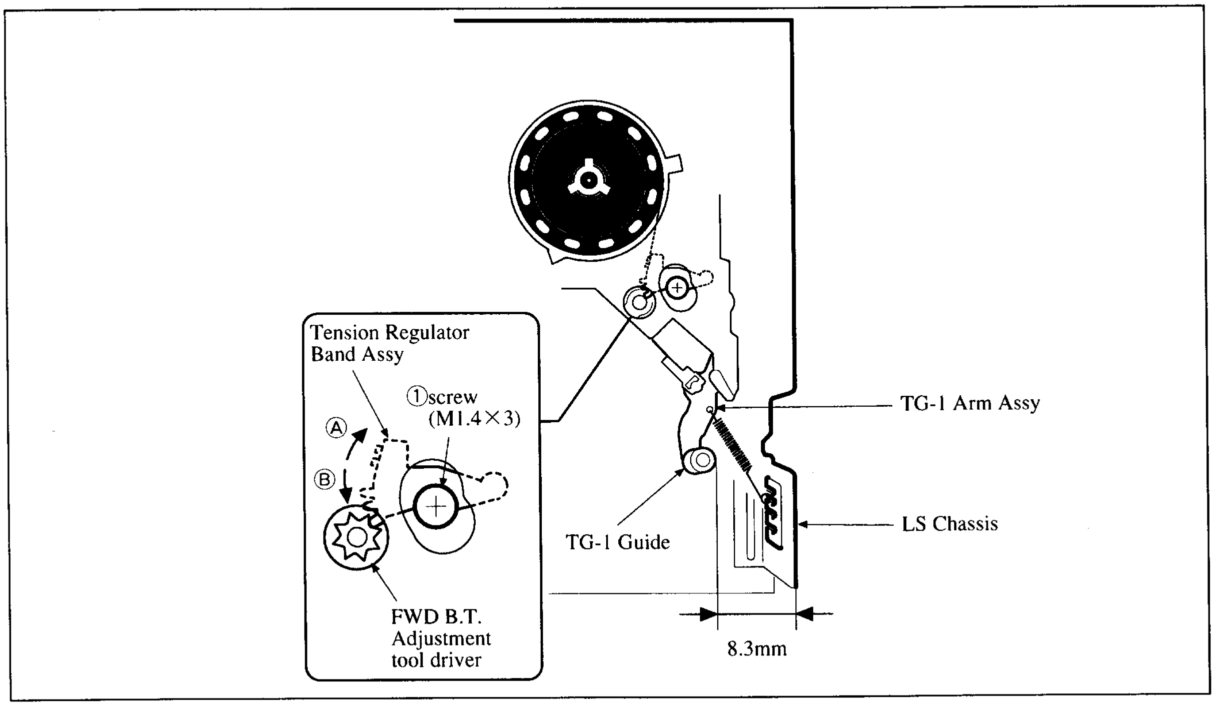

Tension Regulator Band Assy
①screw (M1.4×3)
Ⓐ
Ⓑ
FWD B.T. Adjustment tool driver
TG-1 Guide
TG-1 Arm Assy
LS Chassis
8.3mm

Fig.24

3-19. FWD Tape Hold-Back Tension Adjustment (Refer to Fig. 25)

1. Adjustment Procedure

1) Insert the torque measurement cassette to the machine.
2) Put the machine in the FWD mode. Confirm that the reading on the S side is in the range from 8.0 to 10.5 g•cm. If the reading is outside the specification range, make the following adjustments.
3) If the reading is higher than the specification, change the TG-1 Tension Spring to the side Ⓐ.
4) If the reading is lower than the specification, change the TG-1 Tension Spring to the side Ⓑ.

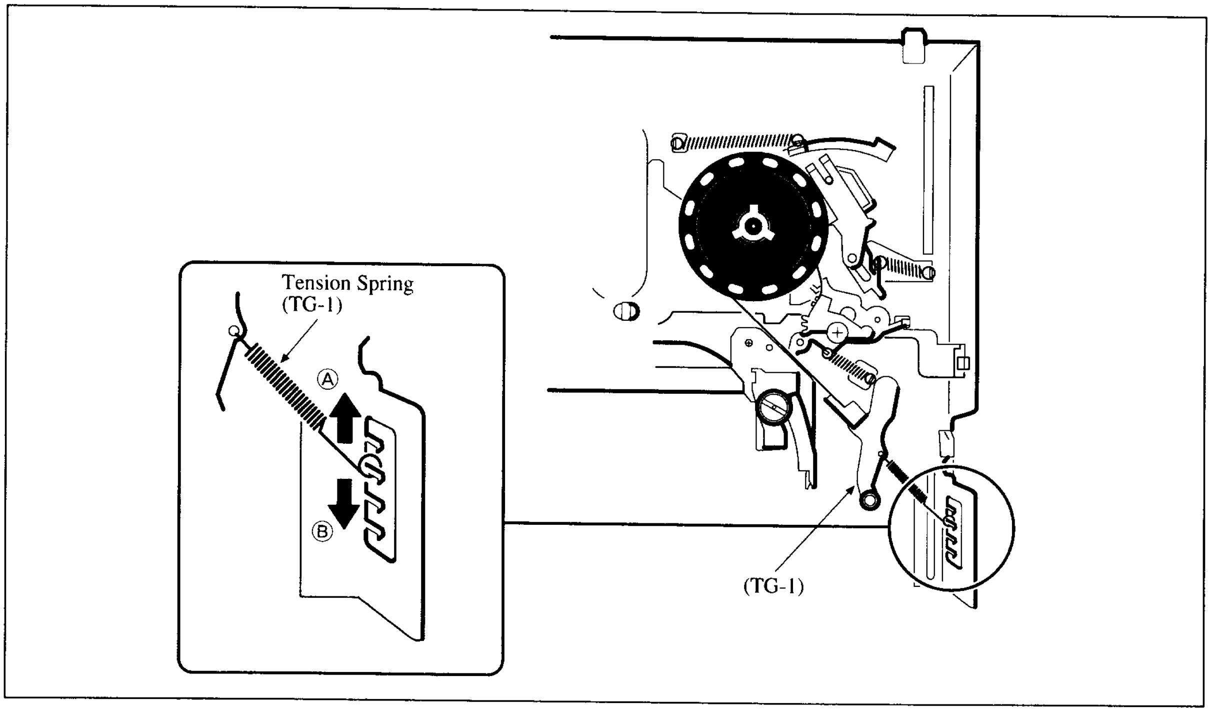


Fig. 25

4. TAPE PATH ADJUSTMENT

Purpose:	Adjusts the head linearity.
Adjustment Error:	Noise appears on top and bottom of display when playing back the tape recorded by other machines.

4-1. Preparations for Adjustments

1) Clean the tape running surface (tape guide, drum, capstan, pinch roller).
2) Connect the adjustment remote commander to the REMOTE terminal (JACK block).
3) Establish the PATH mode using the adjustment remote commander (Track Shift mode)* to cancel auto tracking.
4) Connect an oscilloscope.
   CH1: Test connector PB RF terminal
   External trigger: Test connector PB SWP terminal
5) Playback the tracking alignment tape WR5-1NP (NTSC) or WR5-1CP (PAL) (Ref. No. J-6).
6) Check to see that RF waveform is flat at input and exit sides on oscilloscope.
   If it not flat, perform the following section 4-2 until it is flat.
7) After completing the adjustment, release the PATH mode (Track Shift mode).*.

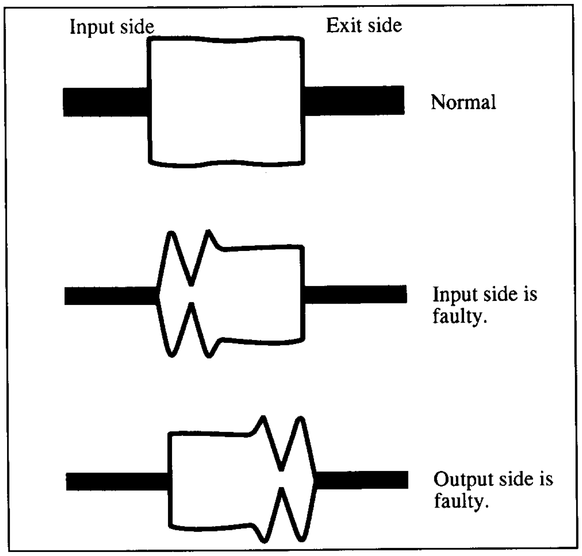


Fig. 26

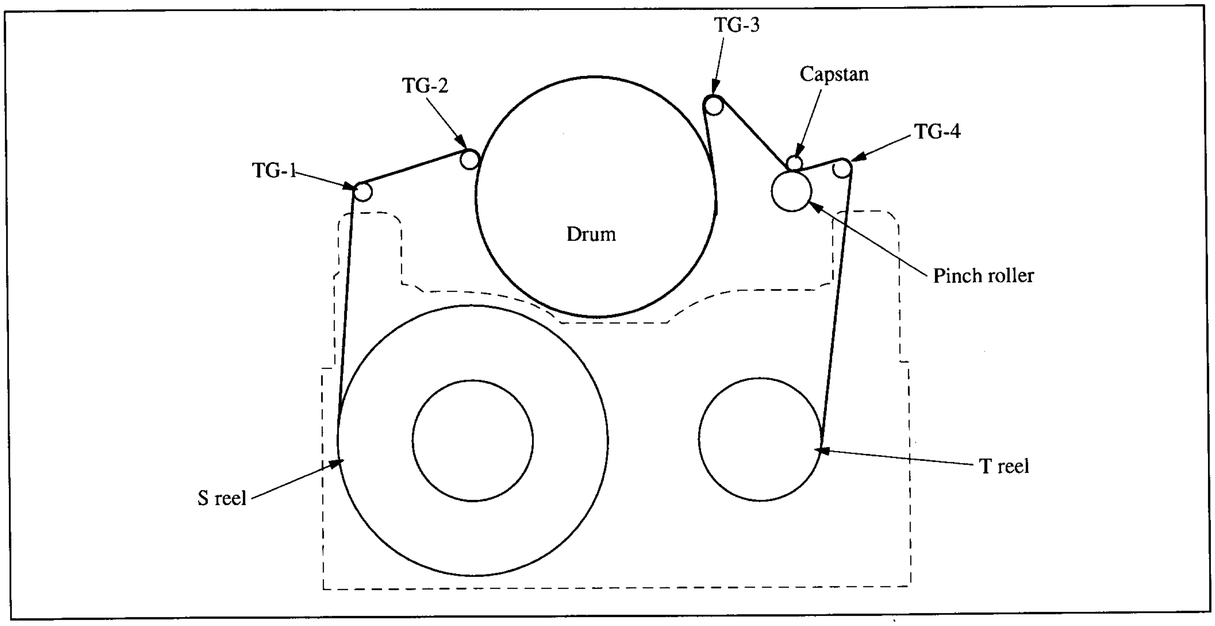


Fig. 27

* How to enter and exit the Track Shift mode. (In the case of CCD-TR420E/TR440E)

Entering the Track Shift mode

1. Select page : 6, address : 00 set data : 01 and press the PAUSE button.
2. Select page : 7, address : 01 set data : 03 and press the PAUSE button.

Exitting the Track Shift mode

1. Select page : 7, address : 01 set data : 00 and press the PAUSE button.
2. Select page : 6, address : 00 set data : 00 and press the PAUSE button.

4-2. Tracking Adjustment (Refer to Fig. 28.)

1) Playback the tracking alignment tape WR5-1NP (NTSC) or WR5-1CP (PAL) (Ref. No. J-6).
2) Adjust the tape guide No. 2 until the input side waveform becomes flat.
3) Adjust the tape guide No. 3 until the input side waveform becomes flat.

☆ Zenith adjustment screws for the TG-2 and TG-3 do not need to be adjusted.

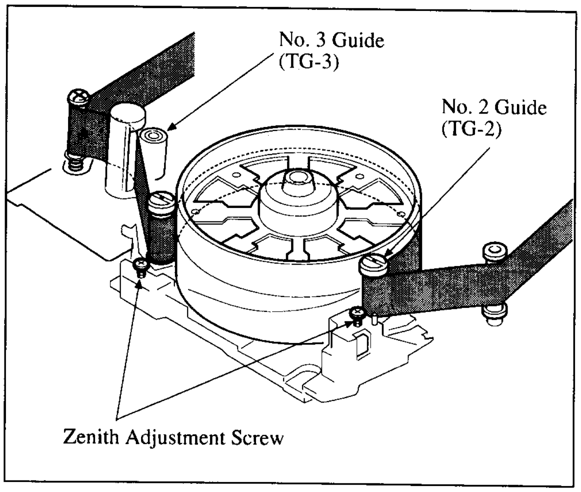


Fig. 28

4-3. No. 4 Guide (TG-4) Adjustment (Refer to Fig. 29.)

1) Playback a tape in REV mode.
2) Confirm that tape slack does not occur in between the guide No. 3 (TG-3) ① and Capstan ②. If tape slack is found, turn the height adjustment screw ④ of the Guide No. 4 (TG-4) ③ until tape slack is removed.
3) Playback a tape in FWD mode. Confirm that tape slack does not occur in between the guide No. 4 (TG-4) ③ and capstan ②. (Specification = 0.5 mm or less) If tape slack of more than 0.5 mm is found, turn the TG-4 nut ④ until the slack is 0.5 mm or less. Playback tape in REV mode and confirm that tape slack in between the guide No. 3 (TG-3) ① and capstan ② is 0.3 mm or less, the adjustment is complete.

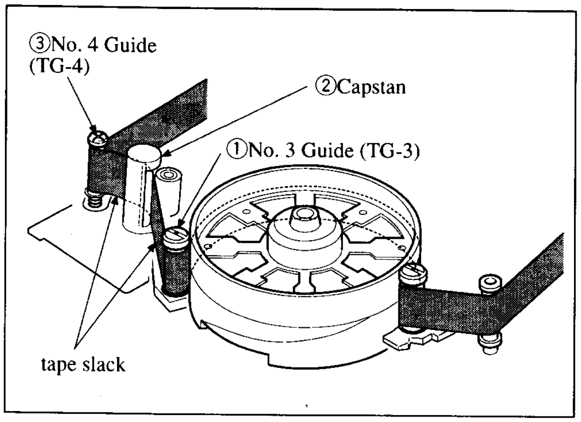


Fig. 29

4-4. CUE, REV Waveforms Check (Refer to Fig. 30.)

1) Playback the tracking alignment tape in REV mode.
   Confirm that pitches between the peaks of the waveform are equally spaced for 5 seconds or longer.
   The pitches are not equally spaced, perform sections "4-2. Tracking Adjustment" and section "4-3. No. 4 Guide Adjustment".
2) Playback the tracking alignment tape in CUE mode.
   Confirm that pitches between the peaks of the waveform are equally spaced for 5 seconds or longer.
   The pitches are not equally spaced, perform section "4-2. Tracking Adjustment".

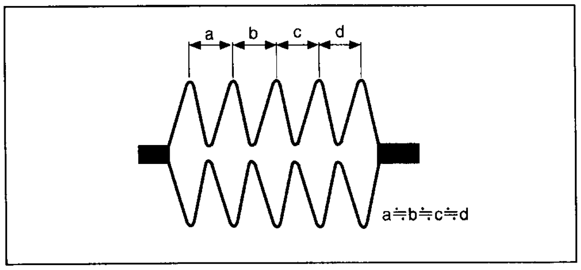


Fig. 30

4-5. Checks After Adjustments

4-5-1. Tracking Check

1) Confirm that amplitude of the RF waveform decreases to about 3/4 when the machine enters the PATH mode. (Refer to Fig. 31)
2) Confirm that the minimum amplitude (EMIN) of the RF waveform is 65 % or more of the maximum amplitude (EMAX). (Refer to Fig. 32)
3) Confirm that the RF waveform does not have too much fluctuation. (Refer to Fig. 33)

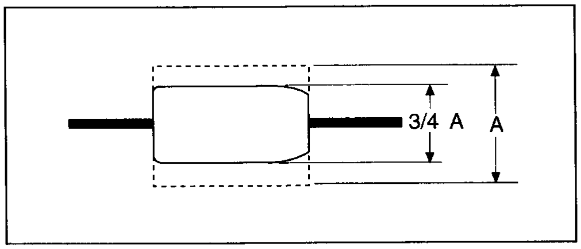


Fig. 31

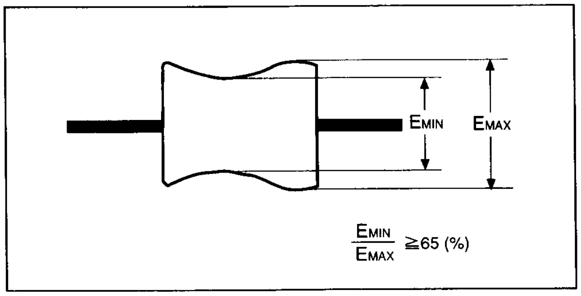


Fig. 32

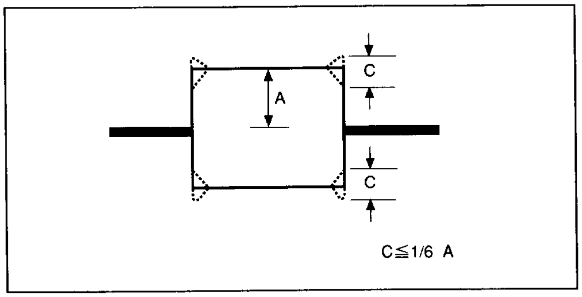


Fig. 33

4-5-2. Waveform Build-up Check (Refer to Fig. 34.)

1) Playback the tracking alignment tape.
2) Turn OFF the Track Shift mode.
3) Eject the tape once, insert and load the tape.
4) Start playing back the tape and confirm that the RF waveform builds up in three seconds with flat envelope. Confirm at this time that tape slack does not occur near pinch roller.
5) Playback the tape in CUE/REV and FF/REW modes respectively. Confirm that the RF waveform builds up in three seconds with flat envelope. Confirm at this time that tape slack does not occur near pinch roller.
6) Repeat the check items 3) to 5) again.

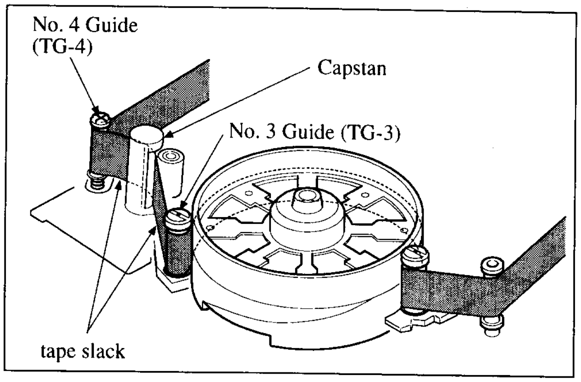


Fig. 34

4-5-3. Tape Pass Check (Refer to Fig. 35.)

1) Insert a thin video tape such as P6-120MP (NTSC) or P5-120MP (PAL). Playback the thin tape. Confirm that there is no clearance or curl of 0.3 mm or more at the following points: Upper flange of guide No. 2, upper flange of guide No. 3, upper and lower flanges of guide No. 4.
2) Confirm that there is no clearance or curl of 0.3 mm or more at each tape guide when the FF button is pressed from the playback mode to enter the CUE mode, and when the REW button is pressed from the playback mode to enter the REV mode.

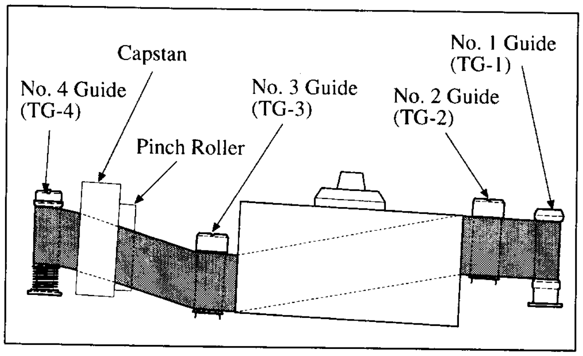
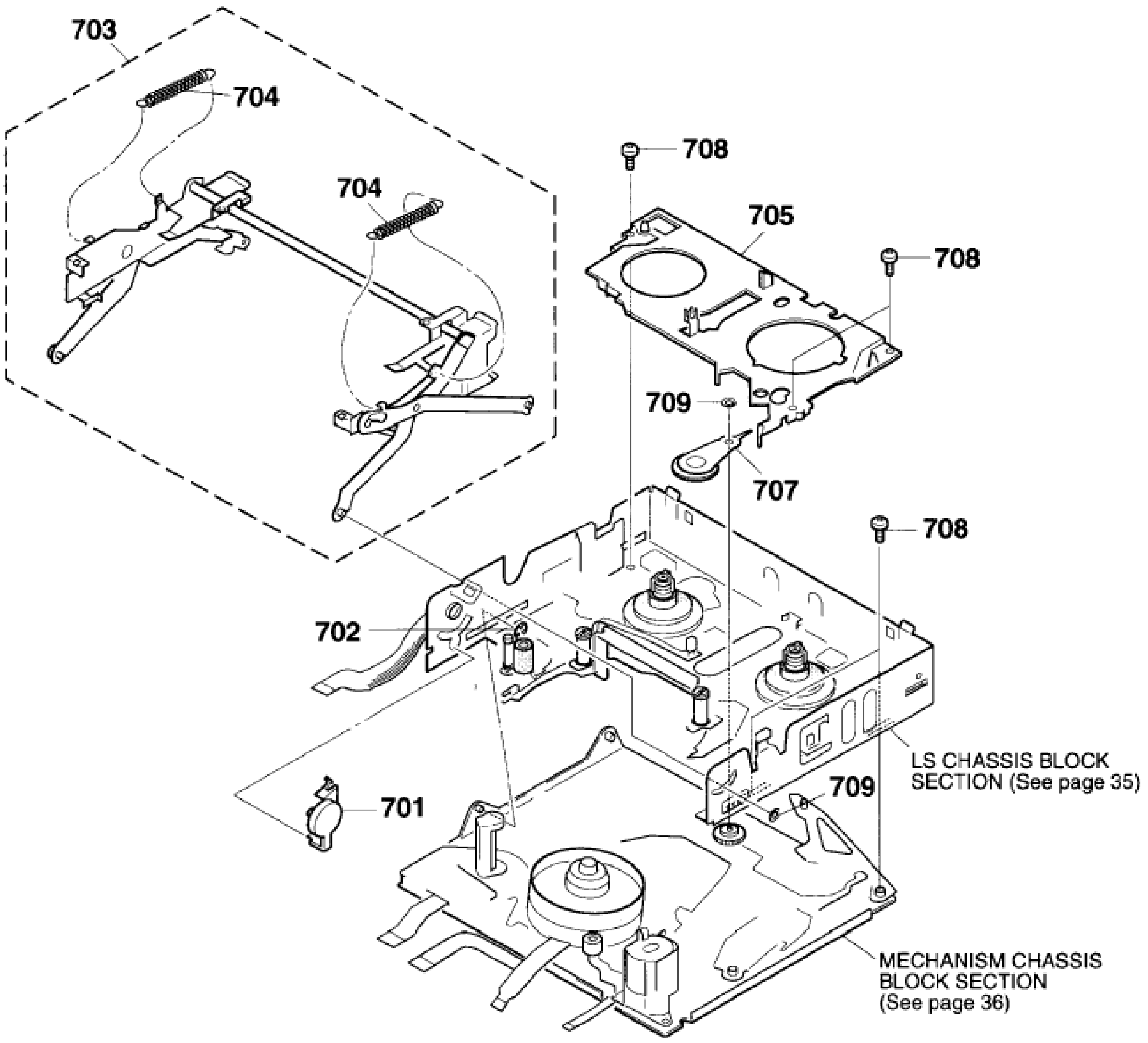


Fig. 35

5-1. Cassette Compartment Block Section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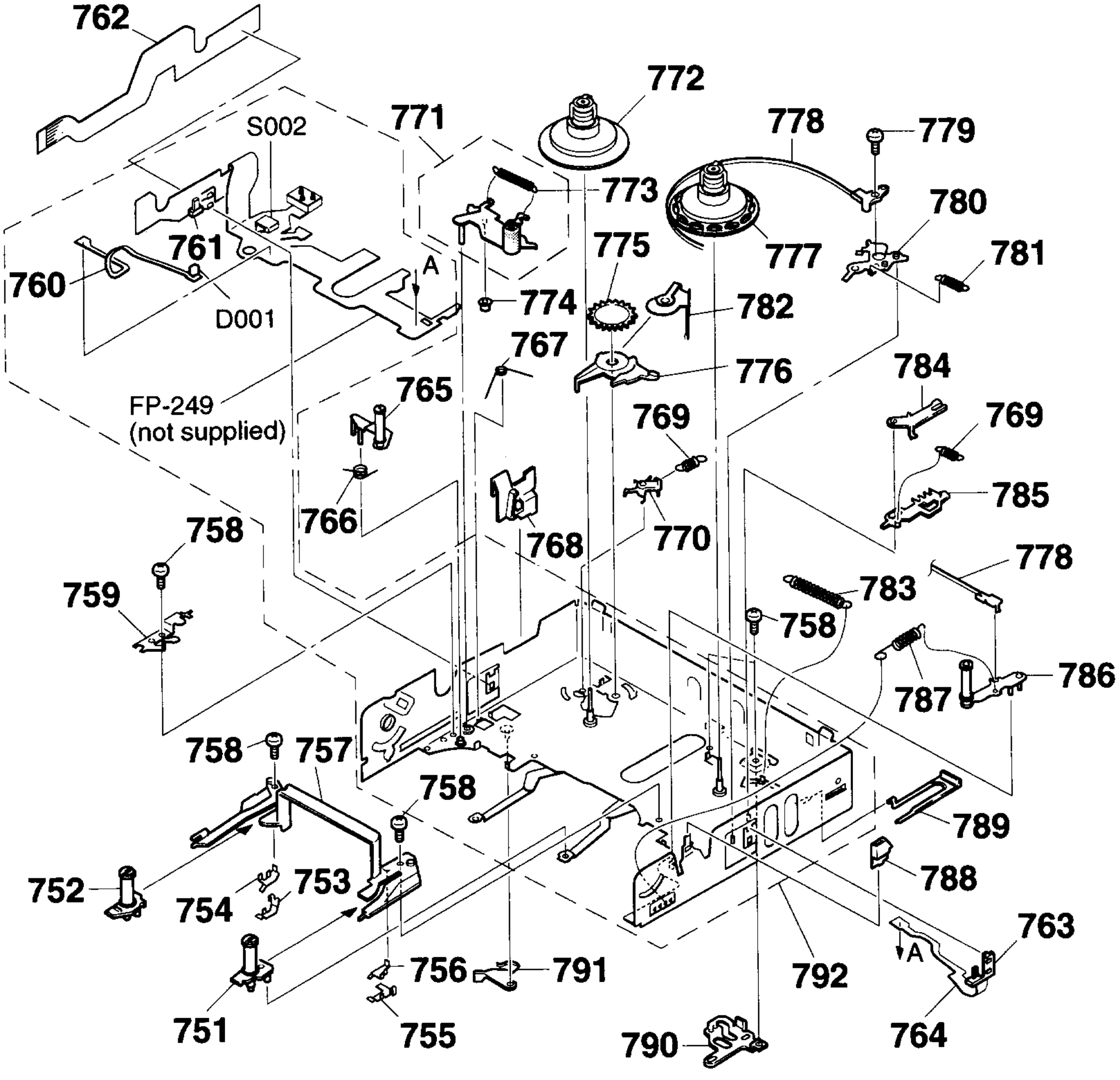
LS CHASSIS BLOCK SECTION (See page 35)
MECHANISM CHASSIS BLOCK SECTION (See page 36)

5-2. LS Chassis Block Section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S002
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FP-249
(not supplied)
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769
785
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768
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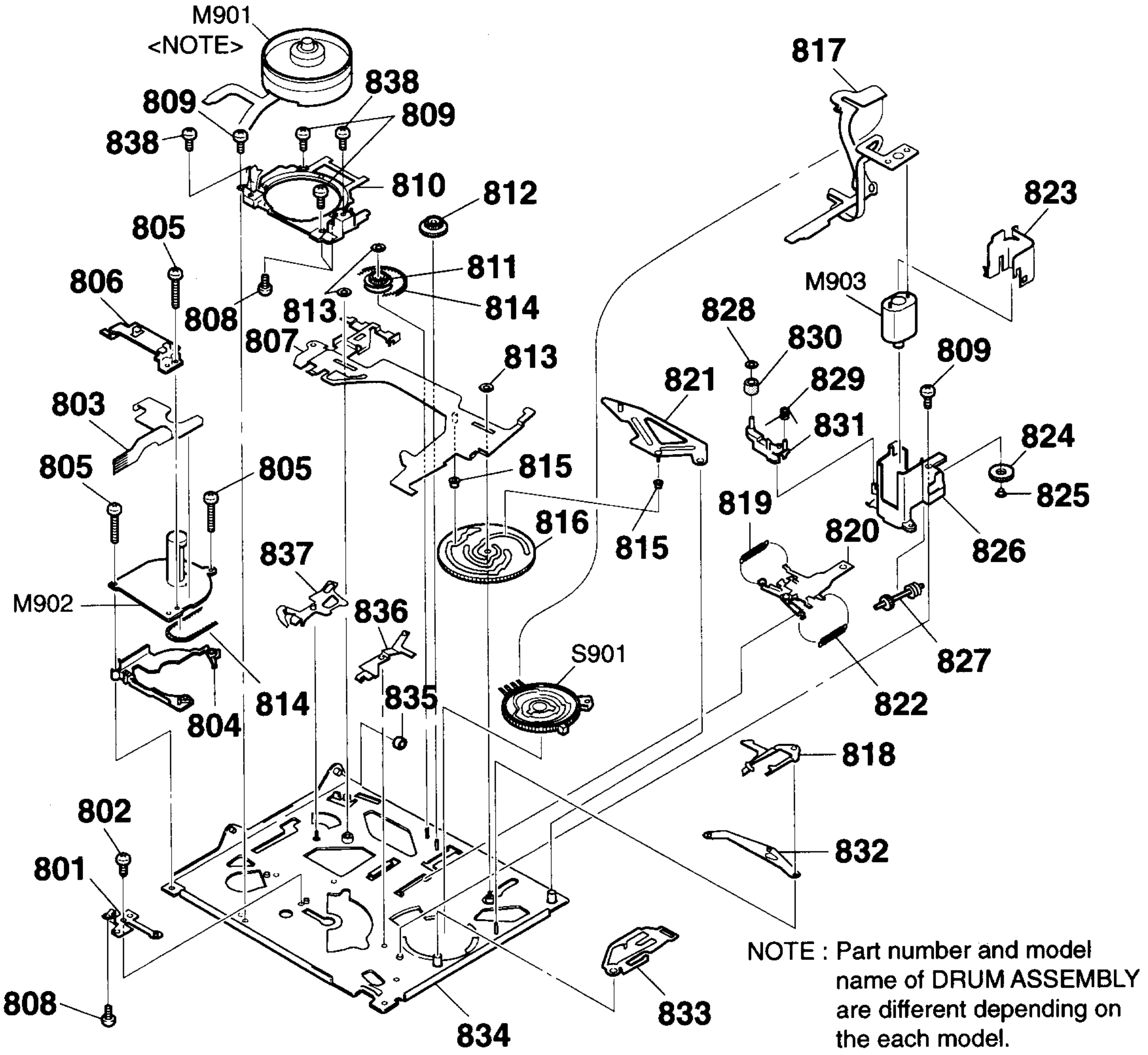
5-3. Mechanism Chassis Block Section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NOTE : Part number and model name of DRUM ASSEMBLY are different depending on the each model.